# SERVICE MANUAL

Color Inkjet Printer

## EPSON STYLUS PHOTO 895/785EPX

COLOR IMAGING EPSON

EPSON®

SEIJ01001

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# PRECAUTIONS

Precautionary notations throughout the text are categorized relative to 1)Personal injury and 2) damage to equipment.

***DANGER*** Signals a precaution which, if ignored, could result in serious or fatal personal injury. Great caution should be exercised in performing procedures preceded by DANGER Headings.

***WARNING*** Signals a precaution which, if ignored, could result in damage to equipment.

The precautionary measures itemized below should always be observed when performing repair/maintenance procedures.

## ***DANGER***

1. ALWAYS DISCONNECT THE PRODUCT FROM THE POWER SOURCE AND PERIPHERAL DEVICES PERFORMING ANY MAINTENANCE OR REPAIR PROCEDURES.
2. NO WORK SHOULD BE PERFORMED ON THE UNIT BY PERSONS UNFAMILIAR WITH BASIC SAFETY MEASURES AS DICTATED FOR ALL ELECTRONICS TECHNICIANS IN THEIR LINE OF WORK.
3. WHEN PERFORMING TESTING AS DICTATED WITHIN THIS MANUAL, DO NOT CONNECT THE UNIT TO A POWER SOURCE UNTIL INSTRUCTED TO DO SO. WHEN THE POWER SUPPLY CABLE MUST BE CONNECTED, USE EXTREME CAUTION IN WORKING ON POWER SUPPLY AND OTHER ELECTRONIC COMPONENTS.
4. WHEN DISASSEMBLING OR ASSEMBLING A PRODUCT, MAKE SURE TO WEAR GLOVES TO AVOID INJURIER FROM METAL PARTS WITH SHARP EDGES.

## ***WARNING***

1. REPAIRS ON EPSON PRODUCT SHOULD BE PERFORMED ONLY BY AN EPSON CERTIFIED REPAIR TECHNICIAN.
2. MAKE CERTAIN THAT THE SOURCE VOLTAGES IS THE SAME AS THE RATED VOLTAGE, LISTED ON THE SERIAL NUMBER/RATING PLATE. IF THE EPSON PRODUCT HAS A PRIMARY AC RATING DIFFERENT FROM AVAILABLE POWER SOURCE, DO NOT CONNECT IT TO THE POWER SOURCE.
3. ALWAYS VERIFY THAT THE EPSON PRODUCT HAS BEEN DISCONNECTED FROM THE POWER SOURCE BEFORE REMOVING OR REPLACING PRINTED CIRCUIT BOARDS AND/OR INDIVIDUAL CHIPS.
4. IN ORDER TO PROTECT SENSITIVE MICROPROCESSORS AND CIRCUITRY, USE STATIC DISCHARGE EQUIPMENT, SUCH AS ANTI-STATIC WRIST STRAPS, WHEN ACCESSING INTERNAL COMPONENTS.
5. DO NOT REPLACE IMPERFECTLY FUNCTIONING COMPONENTS WITH COMPONENTS WHICH ARE NOT MANUFACTURED BY EPSON. IF SECOND SOURCE IC'S OR OTHER COMPONENTS WHICH HAVE NOT BEEN APPROVED ARE USED, THEY COULD CAUSE DAMAGE TO THE EPSON PRODUCT, OR COULD VOID THE WARRANTY OFFERED BY EPSON.

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# About This Manual

This manual describes basic functions, theory of electrical and mechanical operations, maintenance and repair procedures of the printer. The instructions and procedures included herein are intended for the experienced repair technicians, and attention should be given to the precautions on the preceding page.

## *Manual Configuration*

This manual consists of six chapters and Appendix.

**CHAPTER 1. PRODUCT DESCRIPTIONS**
Provides a general overview and specifications of the product.

**CHAPTER 2. OPERATING PRINCIPLES**
Describes the theory of electrical and mechanical operations of the product.

**CHAPTER 3. TROUBLESHOOTING**
Describes the step-by-step procedures for the troubleshooting.

**CHAPTER 4. DISASSEMBLY / ASSEMBLY**
Describes the step-by-step procedures for disassembling and assembling the product.

**CHAPTER 5. ADJUSTMENT**
Provides Epson-approved methods for adjustment.

**CHAPTER 6. MAINTENANCE**
Provides preventive maintenance procedures and the lists of Epson-approved lubricants and adhesives required for servicing the product.

**APPENDIX** Provides the following additional information for reference:

- Connector pin assignments
- Electric circuit boards components layout
- Electrical circuit boards schematics
- Exploded diagram & Parts List

## *Symbols Used in this Manual*

Various symbols are used throughout this manual either to provide additional information on a specific topic or to warn of possible danger present during a procedure or an action. Be aware of all symbols when they are used, and always read NOTE, CAUTION, or WARNING messages.

Indicates an operating or maintenance procedure, practice or condition that, if not strictly observed, could result in injury or loss of life.

Indicates an operating or maintenance procedure, practice, or condition that, if not strictly observed, could result in damage to, or destruction of, equipment.

May indicate an operating or maintenance procedure, practice or condition that is necessary to accomplish a task efficiently. It may also provide additional information that is related to a specific subject, or comment on the results achieved through a previous action.

I.ndicates an operating or maintenance procedure, practice or condition that, if not strictly observed, could result in injury or loss of life.

Indicates that a particular task must be carried out according to a certain standard after disassembly and before re-assembly, otherwise the quality of the components in question may be adversely affected.

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# Revision Status

| Revision | Issued Date | Description |
|---|---|---|
| A | April 19, 2001 | First Release |

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CHAPTER

# 1

# PRODUCT DESCRIPTION

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# 1.1 FEATURES

The major features of EPSON color inkjet printer EPSON Stylus PHOTO 895/785EPX are:

- ☐ Standalone print
- ☐ Card reader function for PCMCIA Flash ATA
- ☐ Applicable to Compact Flash, Smart Media, Memory Stick, Microdrive (with PCMCIA adapter)
- ☐ Connected with a printer unit via USB hub
- ☐ High Color Print Quality
- ☐ High Speed Printing
- ☐ Exclusively used for USB I/F
- ☐ Windows/Macintosh exclusive
- ☐ Compact, Space Saving
- ☐ Multi-size Compatible ASF
- ☐ Roll paper can be used
- ☐ Preview monitor (optional)

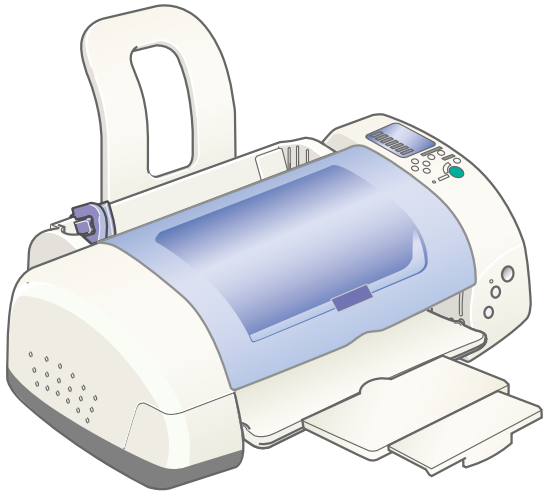


**Figure 1-1. External View**

# 1.2 SPECIFICATIONS

This section covers specifications of the printer.

## 1.2.1 Physical Specification

- Weight: 5.25kg (without ink cartridges)
- Dimension:
  - Storage: 467 mm (W) x 255.7 mm (D) x 212.1mm (H)
  - Printing: 467 mm (W) x 484.1mm (D) x 308.5mm (H)

## 1.2.2 Printing Specification

- Print Method
  - On demand ink jet
- Nozzle Configuration
  - Monochrome 48 nozzles
  - Color 48 nozzles x 5 (Cyan, Magenta, Yellow, Light cyan, Light magenta)
- Print Direction
  - Bi-direction with logic seeking
- Print Speed & Printable Columns

**Table 1-1. Character Mode**

| Character Pitch | Printable Column | LQ Speed |
|---|---|---|
| 10 CPI (Pica) | 82 | 238 CPS* |

**This value is the speed of normal-dot printing.*

**Table 1-2. Raster Graphics Mode**

| Horizontal Resolution | Printable Area | Available Dot | CR Speed |
|---|---|---|---|
| 360 dpi | 8.26 inches | 2976 | 23.8 IPS |
| 720 dpi | 8.26 inches | 5952 | 20 IPS |
| 1440 dpi | 8.26 inches | 11904 | 20 IPS |

- Control Code
  - ESC/P Raster
- Character Tables
  - One international character sets:

    - PC 437 (US, Standard Europe)
- Typeface
  - Bit map LQ font:

    EPSON Courier 10 CPI

## 1.2.3 Paper Feeding

- Feed Method
  - Friction feed with ASF
- Paper Path
  - Cut-sheet ASF
    (Top entry, Front out)
- Feed Speed
  - 126 ms (during 10.16 mm paper feed)
  - 114.3mm/sec (Fast, Continuous feed)

## 1.2.4 Input Data Buffer

- 32KB

## 1.2.5 Electric Specification

**[120V Version]**

| | |
|---|---|
| Rated Voltage: | AC120V |
| Input Voltage Range: | AC90~132V |
| Rated Frequency Range: | 50~ 60Hz |
| Input Frequency Range: | 49.5~ 60.5Hz |
| Rated Current: | 0.45A |
| Power Consumption: | Approx. 19W (ISO10561 Letter Pattern)<br>Approx. 3.5W in standby mode<br>Energy Star compliant |
| Insulation Resistance: | 10M ohms min.<br>(between AC line and chassis, DC 500V) |
| Dielectric Strength: | AC 1000V rms. 1 minute or<br>AC 1200V rms. 1 second<br>(between AC line and chassis) |

**[220 ~ 240V Version]**

| | |
|---|---|
| Rated Voltage: | AC220V~240V |
| Input Voltage Range: | AC198~264V |
| Rated Frequency Range: | 50~60Hz |
| Input Frequency Range: | 49.5~60.5Hz |
| Rated Current: | 0.25 A |
| Power Consumption: | Approx. 19W (ISO10561 Letter Pattern)<br>Approx. 3.5W in standby mode<br>Energy Star compliant |
| Insulation Resistance: | 10M ohms min.<br>(between AC line and chassis, DC 500V) |
| Dielectric Strength: | AC 1500V rms. 1 minute<br>(between AC line and chassis) |

## 1.2.6 Environmental Condition

- Temperature
  - Operating: 10 to 35×C (see the figure below for condition)
  - Non-operating: -20 to 60×C (with shipment container)
    1 month at 40×C and 120 hours at 60×C
- Humidity
  - Operating: 20 to 80% RH
    (without condensation / see the figure below for condition)
  - Non-operating: 5 to 85% RH
    (without condensation / with shipment container)
- Resistance to Shock
  - Operating: 1G, within 1 ms
  - Non-operating: 2G, within 2 ms (with shipment container)
- Resistance to Vibration
  - Operating: 0.15G
  - Non-operating: 0.50G (with shipment container

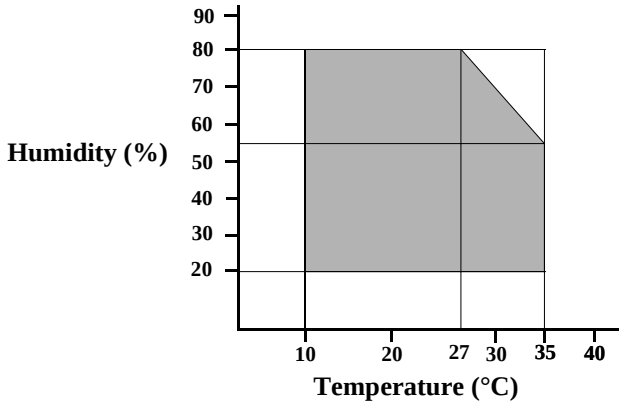



**Figure 1-2. Temperature/Humidity Range**

## 1.2.7 Reliability

Total Print Volume: 16,000 pages (A4, Letter)
or 5 years although less than 50.000 pages printing

Print Head Life: 3 billion dots/nozzle
or 5 years although less than 3 billion dots/nozzle printing

## 1.2.8 Safety Approvals

**[120V Version]**
Safety Standards: UL1950
CSA22.2 No.950

EMI: FCC part 15 subpart B Class B
CSA C108.8 Class B

**[220~240V Version]**
Safety Standards: EN60950 (VDE)

EMI: EN55022 (CISPR Pub.22) Class B
AS/NZS 3548 Class B

## 1.2.9 Acoustic Noise

Level: Approx. 47dB(A) (According to ISO 7779)

## 1.2.10 CE Marking

**[220~240V Version]**
Low Voltage Directive 73/23/EEC: EN60950
EMC Directive 89/336/EEC: EN55022 Class B
EN61000-3-2
EN61000-3-3
EN55024

# 1.3 INTERFACE

The EPSON Stylus PHOTO 895/785EPX provides USB and as standard.

## 1.3.1 USB Interface

| | |
|---|---|
| Standard: | Based on:<br>"Universal Serial Bus Specification Rev. 1.1"<br>"Universal Serial Bus Device Class Definition for Printing Device Version 1.1" (Printer)<br>"Universal Serial Bus Mass Storage Class Bulk-Only Transport Rev. 1.0" (Storage) |
| Bit Rate: | 12Mbps (Full Speed Device) |
| Data Encoding: | NRZI |
| Adaptable Connector: | USB Series B |
| Recommended Cable Length: | 2 meters |

**Table 1-3. Connector Pin Assignment and Signals**

| Pin No. | Signal Name | I/O | Function Description |
|---|---|---|---|
| 1 | VCC | - | Cable power. Max. power consumption is 2mA. |
| 2 | -Data | Bi-D | Data |
| 3 | +Data | Bi-D | Data, pull up to +3.3 V via 1.5K ohm resistor. |
| 4 | Ground | - | Cable ground |

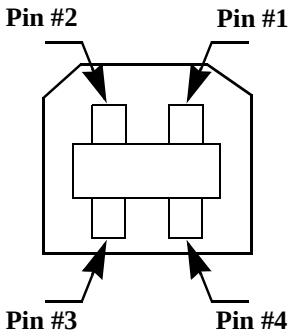



**Figure 1-3. USB Pin Assignment**

- Device ID
  [00H] [60H]
  MFG: EPSON;
  CMD: ESCPL2, BDC, D4;
  MDL: Stylus [SP] Photo [SP] 785 EPX;
  CLS: PRINTER;
  DES: EPSON [SP]Stylus [SP] Photo [SP] 785EPX;

# 1.4 PCMCIA Card Slot

## 1.4.1 Card Slot Standard

PCMCIA Type-II card slot x 1
(In accordance with the PC Card Standard ('97), JEIDA)

## 1.4.2 Supported Memory Card

- PCMCIA Flash ATA card
- Compact Flash (with PCMCIA adapter)
- Smart Media (with PCMCIA adapter)
- Memory Stick (with PCMCIA adapter)
- Microdrive (with PCMCIA adapter)

## 1.4.3 Supported Voltage

- 5v only
- 3.3v/5v
- 3.3v only

***Note1:*** *Media that uses 3.3v/5v is automatically set based on the VS1 terminal (PCMCIA).*
***Note2:*** *The supply current to the memory card is max. 330mA.*

# 1.5 Standalone Print Function

## 1.5.1 File System

The file system that can be used by the standalone print function of this machine is DCF Version 1.0 only.
Compatibility of other file systems is not guaranteed.

Also, the file system that the card reader function can handle is in accordance with the specifications of the host.

For the detailed specification of DCF, see “Camera File System Standard DCF Version 1.0, JEIDA-49-2-1998”.

## 1.5.2 File Format

The following file formats can be used for this machine:

- JPEG file (*.JPG)

  Photo data file in accordance with Exif Version 2.1

- UDL file (*.USD)

  Definition file for user defined layout. Only files in the ¥MISC¥ directory are valid.

- Camera specification file (*.MRK)

  Definition file used in camera specification mode. “AUTOPRINT.MRK” file that has a full-pass name with up to 32 characters is valid.

- EPSON frame file (*.EFF)

  Frame data file format defined for standard use of EPSON products. Only files in the “¥MISC¥FRAME¥” directory are valid.

* PNG and TIFF formats are not supported.

## 1.5.3 Valid Image Sizes

The image sizes that are valid in this machine are in accordance with DCF Version 1.0.

Note that the image sizes that are mandatory for DCF Version 1.0 are as follows:

Horizontal: 160 <= X <= 1800 (pixel)

Vertical: 160 <= Y <= 1200 (pixel)

However, this machine handles the following size range:

Horizontal: 160 <= X <= 3200 (pixel)

Vertical: 160 <= Y <= 3200 (pixel)

## 1.5.4 Maximum Number of Photo Data Files

This machine can handle up to 999 photo data files. If 1000 or more photo data files are recorded in a memory card, these files are sorted in accordance with the file sort rule of this machine, and photo data with photo numbers 1 to 999 are used as valid data. Photo data files that are specified for printing in the camera specification file can be specified for printing only if their photo number exceed 999. However, the numbers of photos that can be specified for printing are limited to 999.

## 1.5.5 Thumbnail Image Data

Only thumbnail image data in accordance with DCF Version 1.0 (160x120 pixels in Exif format) can be handled. This machine uses thumbnail images in index print mode. However, you can set not to use thumbnail images in this mode.

## 1.5.6 File Sort

This machine sorts all the photo data files in a memory card using the information such as date, time, and file name attached to the photo data files to assign photo numbers. Because the photo number is assigned in accordance with the file sort rule specific to this machine, it may not match with the photo number displayed when the data is viewed in a digital camera.

### 1.5.6.1 File Sort Rule

This machine sorts the photo data files based on the following priorities:

1. Older data first. The date and time information attached to the photo data files are used for sorting. Up to seconds are used for the time information.
2. If files with same date exist, the full-pass of the file names are sorted in normal ASCII order.

### 1.5.6.2 Date Data Capture Rule

This machine tries to capture the date and time from each photo data file based on the following priorities:

1. Date and time information in accordance with the digital camera standard format (Exif).
2. Data and time information of the file system supported in DOS (timestamp of the file).
3. Fixed values (1 January 1970 00:00:00)

Note that the date and time information attached to each photo data file may not match with the date and time at which the photo was captured. Some of the said date and time data is updated due to a calendar setting (whether the function exist/not exist, incorrect preset date) in a digital camera, post-processing or restoring of the photo data. If the data has been updated, this machine captures the updated date and time information for further processing.

### 1.5.6.3 Date Range

This machine can handle the following range of date. If photo data files have date and time information outside the following range, all the file sort results are undetermined.

1 January 1970 00:00:00 - 31 December 2069 23:59:59

# 1.6 Printer PNL Operation Specifications

## 1.6.1 Switches

There are three non-lock type push switches, one lock-type push switch, and one LED lights.

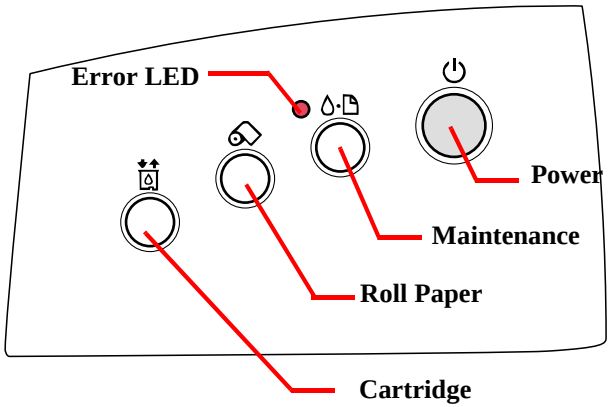



**Figure 1-4. Control Panel**

## 1.6.2 Indicators

☐ Error
Lights or blinks when some error has occur to the printer

## 1.6.3 Panel Functions

**Table 1-4. Panel Functions**

| Switch | Function |
|---|---|
| Maintenance | • Loads or Ejects the Paper (Pushing within 3seconds).<br>• Starts the Cleaning of head (Pushing for 3seconds).<br>• When carriage is on the Ink Cartridge change position, return carriage from Ink Cartridge change position. |
| Roll paper | • Loads or Ejects (Back Out feed by pushing for 3 seconds) the Roll paper.<br>• Tear Off feed and return.<br>• When carriage is on the Ink Cartridge change position, return carriage from Ink Cartridge change position. |
| Replacement | • Starts the Ink Cartridge change sequence.*<br>• Moves the carriage to cartridge change position.<br>• When carriage is on the Ink carriage change position, return carriage from Ink cartridge change position. |

**This function is not available in printing status.*

**Table 1-5. Panel Functions with Power On**

| Switch | Function |
|---|---|
| Maintenance | • Start status printings. |
| Maintenance<br>+<br>Roll paper | • Enters the special setting mode (Factory use only). *2 |

**1 Not described in the user's manual.*

**2 See the table*

**Table 1-6. Special Setting Mode**

| Switch | Function |
|---|---|
| Maintenance | • Initialize EEPROM. |
| Roll paper (Pushing for 10 seconds) | • Reset the ink overflow counter in the EEPROM. |

## 1.6.4 Printer Condition and Panel Status

**Table 1-7. Error LED Indication**

| Printer Status | Error LED | Priority |
|---|---|---|
| Power ON | - | 10 |
| Ink sequence proceeding | - | 6 |
| Ink cartridge changing | - | 5 |
| Data processing | - | 9 |
| Paper out | On | 4 |
| Paper jam condition | On | 3 |
| Ink end (black) | On -> Blink | 8 |
| Ink low (black) | Blink | 8 |
| Ink end (color) | On -> Blink2 | 9 |
| Ink low (color) | Blink | 8 |
| Ink end (both color, black) | On -> On | 8 |
| No ink cartridge (color or black) | On | 7 |
| Reset, Timer IC reset, EEPROM clear | On (1s) | - |
| Ink overflow counter reset | On (2s) | - |
| Maintenance request (Ink overflow counter) | Blink | 2 |
| Fatal error | On | 1 |
| Special setting | Blink2 | - |

*"-": No change.*
*"A->B": A is a indicator condition when carriage is on Home Position*
*B is indicator in ink exchange sequence.*

*•Blink: Repeats lighting on for 0.5 sec.+ off for 0.5 sec.*

*•Blink2: Repeats lighting on for 0.2 sec.+ off for 0.2 sec. + on for 0.2 sec.+ off for0.4 sec.*

## 1.7 Printer Initialization

There are three kinds of initialization methods, and the following explains each initialization.

1. Power-on Initialization
   This is the initializing operation when the printer power is turned on.

   When printer is initialized, the following actions are performed:
   (a) Initializes printer mechanism.
   (b) Clears input data buffer.
   (c) Clears print buffer.
   (d) Sets default values.

2. Operator Initialization
   This printer is initialized when turning the printer power on again within 10 seconds from last power off.

   When printer is initialized, the following actions are performed:
   (a) Cap the printer head.
   (b) Eject a paper.
   (c) Clears input data buffer.
   (d) Clears print buffer.
   (e) Sets default values.

3. Software Initialization
   The ESC@ command also initialize the printer.

   When printer is initialized, the following actions are performed:
   (a) Clears print buffer.
   (b) Sets default values.

## 1.8 Initial setting values

Initial setting values during the initial operation are as follows. For the storable items of panel setting, default setting and remote commands, the memory contents become default values.

- ☐ Page position: Current paper position shall be the page front end position.
- ☐ Line feed: 4.23 mm (1/6 inch)
- ☐ Right margin: 80 columns
- ☐ Left margin: 1st column
- ☐ Character pitch: 10CPI
- ☐ Print mode: Text mode (Non-raster graphic mode)

## 1.9 Errors

- Ink Out
  When the printer runs out most of the ink of any color, it indicates ink-low and keeps printing. When the printer runs out the whole ink of any color, it stops printing and indicates ink-out error. User is then requested to install a new ink-cartridge in this state. An ink-cartridge that has been taken out once should never be used again. Re-installation of the cartridge not filled fully upsets the ink level detection and may eventually cause a serious problem in the print head.
- Paper Out
  When the printer fails to load a sheet, it goes into a paper out error.
- Paper Jam
  When the printer fails to eject a sheet, it goes into a paper jam error.
- No Ink-Cartridge
  When the printer detects that ink-cartridge comes off, or failed to read or write CSIC data, it goes into this error mode.
- Maintenance Request
  When the total amount of ink wasted through cleanings and flushing reaches to the limit, printer indicates this error and stops. In such a case, the absorber in the printer enclosure needs to be replaced with new one by service personnel.
- Fatal Errors
  Carriage control error.

## 1.10 Printing of filled patterns

Filled patterns can be printed by the following methods.

- Printing by Remote Command
  Use the NC command from the remote commands.
- Status Printing
  Turn the power on while pressing the Paper Feed / Eject button.
- Print by the D4 Control Command
  Send the NC command by the C4 command channel.

# 1.11 Monochrome PNL operation specification

## 1.11.1 Appearance

Following figures show the monochrome PNLs of Stylus PHOTO895 and Stylus PHOTO785EPX. (When all LCDs are displayed)

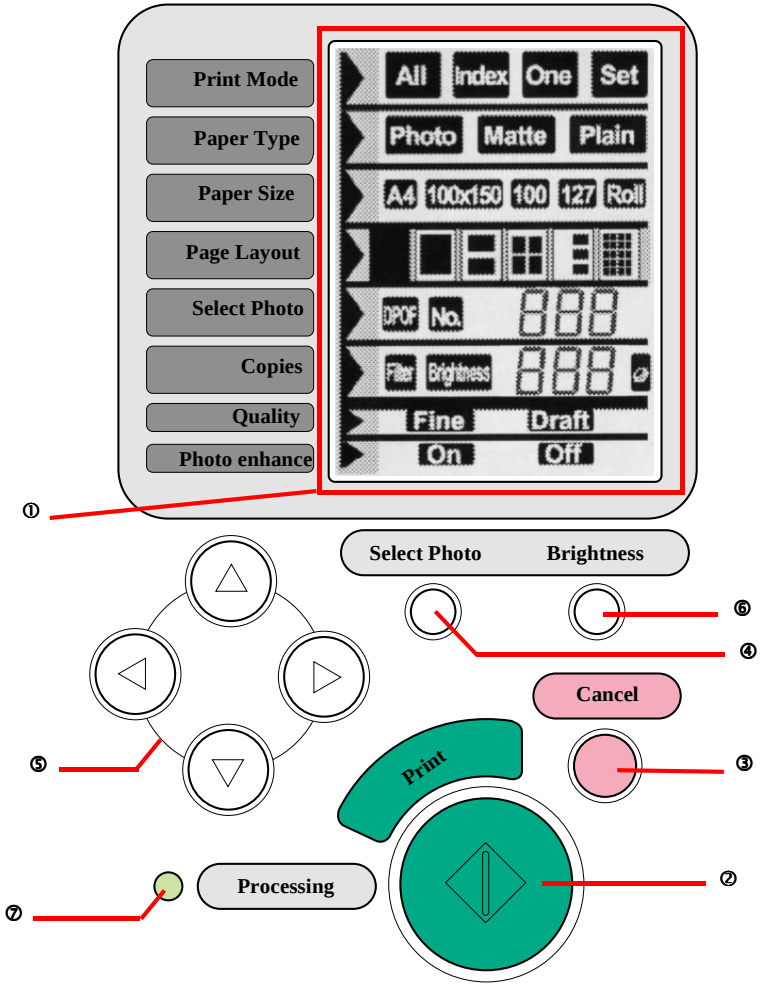



**Figure 1-5. Monochrome PNL of Stylus PHOTO895**

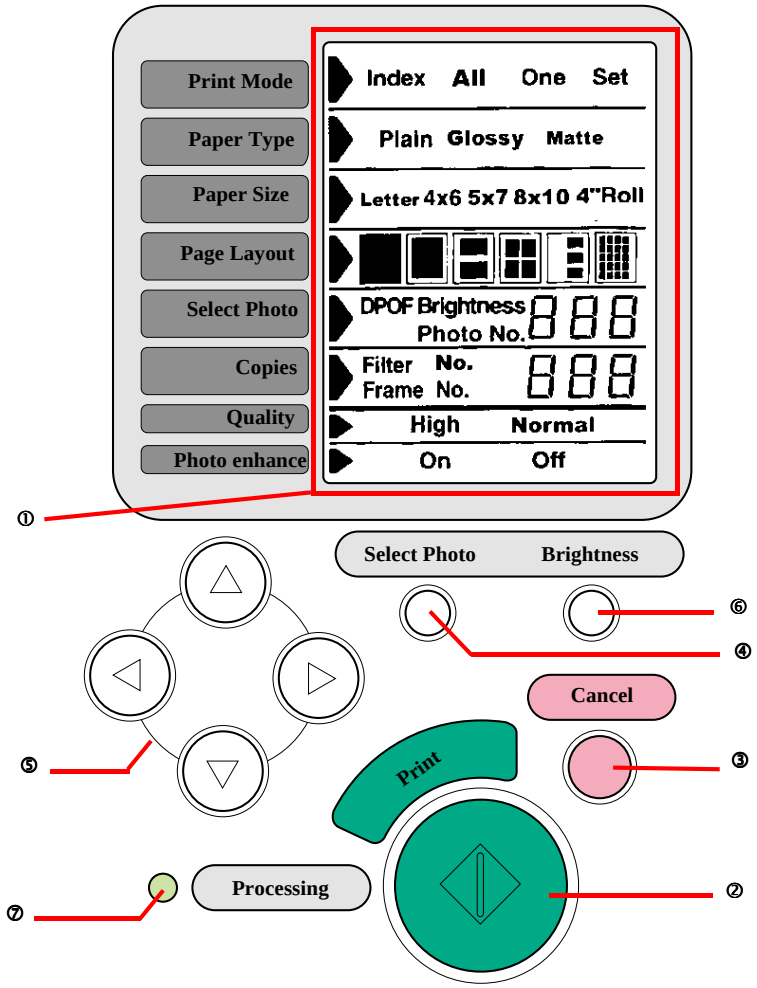



**Figure 1-6. Monochrome PNL of Stylus PHOTO785 EPX**

## 1.11.2 Swith Function

**Table 1-8. Switch description**

| No. | Name | Description |
|---|---|---|
| 1 | LCD PNL | Indicates the print condition setting contents of printer |
| 2 | Print | Printer start operation |
| 3 | Cancel | Cancellation of operations and printing action |
| 4 | Select Photo | Selects one or all frames |
| 5 | Cross-shaped key | Moves the cursor. |
| 6 | Brightness | Sets frame function. |
| 7 | Processing | Lights on or blinks while processing. |

## 1.11.3 Process LED

This LED turns on while the power of the main unit is on and blinks during data processing.

Data processing means the following states:

- Print data exist
- Performing ink sequence
- Changing ink cartridge
- Accessing to a memory card
- Performing standalone printing

Do not remove the memory card while this LED blinks.

## 1.11.4 Error Display (LCD)

This machine displays the following errors with numbers (blinking) on the LCD panel.

**Table 1-9. Error LCD Indication**

| Source | Detail of error | Display (First line) | Display (Second line) | Remarks |
|---|---|---|---|---|
| Printer | No ink (black) | Err | IEb | - |
| | No ink (color) | Err | IEc | |
| | No paper | Err | PE | - |
| | Paper jam | Err | PJ | - |
| | No ink cartridge/abnormality | Err | IC | - |
| | Maintenance required | Err | Sr | - |
| Printon | Memory card error | Err | CE | When an error occurred during reading data from a memory card |
| Common | Fatal error | Err | FE | Unrecoverable error |

# 1.12 PAPER

## 1.12.1 Paper Handling

Do not perform reverse feed more than 1.8mm (0.07”).

## 1.12.2 Paper Specification

### 1.12.2.1 Cut Sheet

***[Size]***

| | |
|---|---|
| A4: | (210mm x 297mm) |
| A5: | (148mm x 210mm) |
| A6: | (105mm x 148mm) |
| B5: | (182mm x 257mm) |
| Letter: | (216mm x 279mm) |
| Half Letter: | (139.7mm x 215.9mm) |
| Legal: | (216mm x 356mm) |
| Executive: | (184.2mm x 266.7mm) |

***[Quality]***

Plain paper, Bond paper

***[Thickness]***

0.08mm ~ 0.11mm (0.003 ~ 0.004 inch)

***[Weight]***

64g/$m^2$ ~ 90g/$m^2$ (17 lb ~ 24 lb, 55kg ~ 78kg)

### 1.12.2.2 Envelope

***[Size]***

| | |
|---|---|
| #10 | (241.3mm x 104.8mm) |
| DL | (220mm x 110mm) |
| C6 | (162mm x 114mm) |
| 220x132 | (220mm x 132mm) |
| Japanese Chokei3 | (120mm x 205mm) |
| Japanese Chokei4 | (90mm x 205mm) |
| Japanese Yokei1 | (120mm x 176mm) |
| Japanese Yokei2 | (114mm x 162mm) |
| Japanese Yokei3 | (98mm x 148mm) |
| Japanese Yokei4 | (105mm x 235mm) |

***[Quality]***

| | |
|---|---|
| #10•DL•C6: | Bond paper, PPC, Air mail |
| Japanese Chokei3,4: | Craft, New Kent |
| Japanese Yokei1,2,3,4: | Craft, New Kent |

***[Weight]***

| | |
|---|---|
| #10•DL•C6: | 45g/$m^2$ ~ 75g/$m^2$ (12 lb ~ 20 lb) |
| Japanese Chokei3,4: | 50g/$m^2$ ~ 70g/$m^2$ (43 kg ~ 60 kg) |
| Japanese Yokei1,2,3,4: | 50g/$m^2$ ~ 100g/$m^2$ (43 kg ~ 86 kg) |

** Envelope printing is only available at normal temperature.*

** Keep the longer side of the envelope horizontally at setting.*

### 1.12.2.3 EPSON special media

***[Quality]***

EPSON specifically designed media for ink jet printers

(1) Photo Quality Ink Jet Paper

***[Size]***

| | |
|---|---|
| A4: | (210mm x 297mm) |
| A6: | (105mm x 148mm) |
| B5: | (182mm x 257mm) |
| Letter: | (216mm x 279mm) |
| Legal: | (216mm x 356mm) |
| 5” x 8”: | (127mm x 203mm) |
| 8” x 10”: | (203mm x 254mm) |
| Japanese Postcard: | (100mm x 148mm) |

(2) 360dpi Ink Jet Paper

***[Size]***

| | |
|---|---|
| A4: | (210mm x 297mm) |
| Letter: | (216mm x 279mm) |

(3) Ink Jet Transparencies

***[Size]***

| | |
|---|---|
| A4: | (210mm x 297mm) |
| Letter: | (216mm x 279mm) |
| A6: | (105mm x 148mm) |

(4) Photo Quality Glossy Film

***[Size]***

| | |
|---|---|
| A4: | (210mm x 297mm) |
| Letter: | (216mm x 279mm) |
| Japanese Postcard: | (100mm x 148mm) |

(5) OHP Sheet

***[Size]***

| | |
|---|---|
| A4: | (210mm x 297mm) |
| Letter | (216mm x 279mm) |

(6) Matte Paper

***[Size]***

| | |
|---|---|
| A4: | (210mm x 297mm) |
| Letter: | (216mm x 279mm) |

(7) Label Sheet

***[Size]***

| | |
|---|---|
| A4: | (210mm x 297mm) |
| Japanese Postcard: | (100mm x 148mm) |
| A6: | (105mm x 148mm) |

(8) Iron-On Cool Peel Transfer Paper

***[Size]***

| | |
|---|---|
| A4: | (210mm x 297mm) |
| Letter: | (216mm x 279mm) |

## 1.12.3 Printing Area

### 1.12.3.1 Cut Sheet

See the figure below and tables on the right for printable areas.

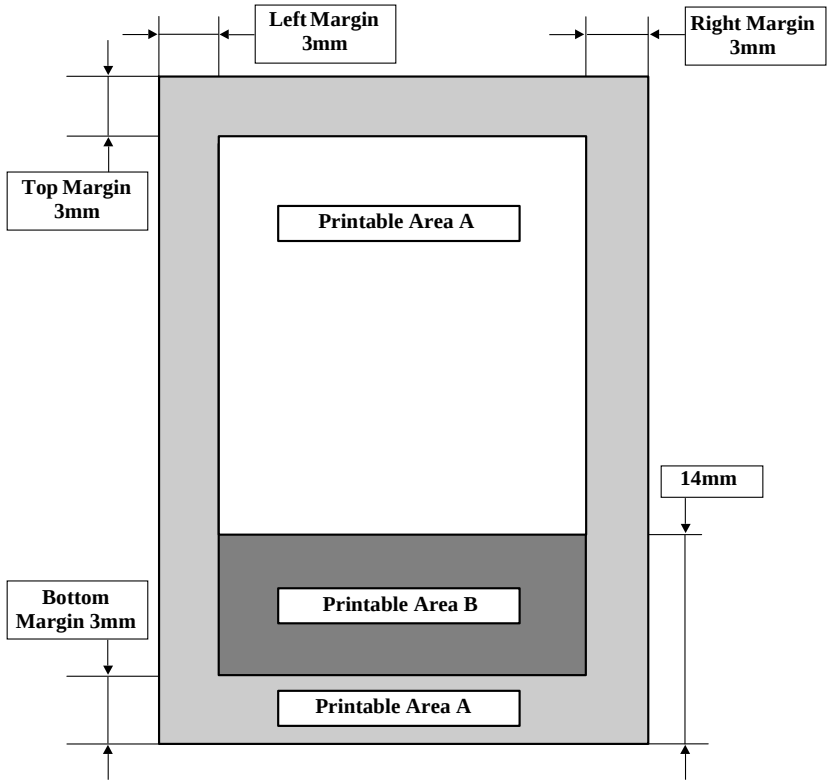



**Figure 1-7. Printable Area for Cut Sheet**

As shown in the illustration above, the printing range consists of a combination of printable areas A, B and C.

The quality of the printing in each of the A, B and C printing areas is different, and there are cases where printing in the B and C areas becomes garbled.

**Table 1-10. Printing Area**

| Paper Size | Left Margin (min.) | Right Margin (min.) | Top Margin (min.) | Bottom Margin (min.) |
|---|---|---|---|---|
| A4 | 3 mm (0.12”) | 3 mm (0.12”) | 3 mm (0.12”) | 14 mm (0.54”) / 3mm (0.12”) * |
| Letter | 3 mm (0.12”) | 3 mm (0.12”) | 3 mm (0.12”) | 14 mm (0.54”) / 3mm (0.12”) * |
| B5 | 3 mm (0.12”) | 3 mm (0.12”) | 3 mm (0.12”) | 14 mm (0.54”) / 3mm (0.12”) * |
| Legal | 3 mm (0.12”) | 3 mm (0.12”) | 3 mm (0.12”) | 14 mm (0.54”) / 3mm (0.12”) * |
| Executive | 3 mm (0.12”) | 3 mm (0.12”) | 3 mm (0.12”) | 14 mm (0.54”) / 3mm (0.12”) * |

* *Bottom margin can be reduced to 3mm when paper dimension is defined by using command, otherwise it is not reduced (14mm). As for an area between 3mm and 14mm margin, printing quality may decline.*

** *Refer to 1.12.2 "Paper Specification" for PW (paper width) and PL (paper length).*

### 1.12.3.2 Envelopes

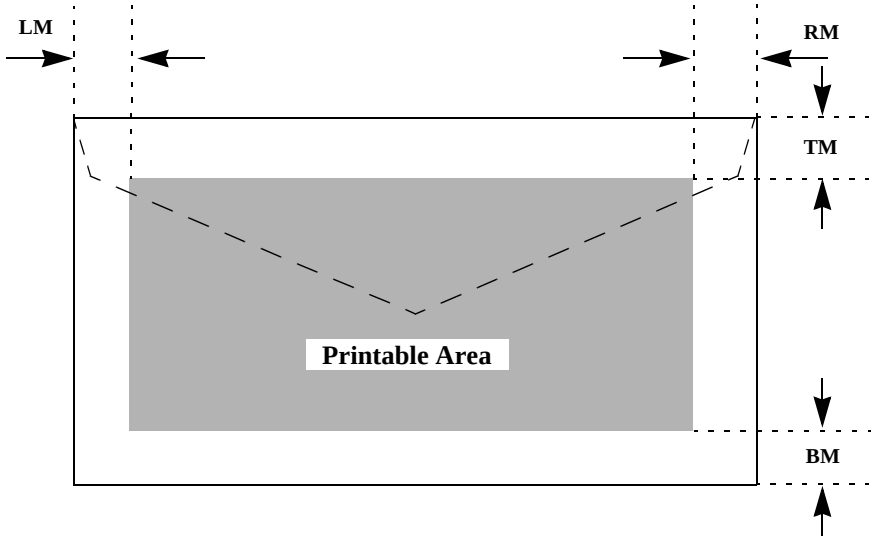



**Figure 1-8. Printable Area for Envelopes**

**Table 1-11. Envelope Margin**

| Size | Left Margin (min.) | Right Margin (min.) | Top Margin (min.) | Bottom Margin (min.) |
|---|---|---|---|---|
| #10 | 3 mm (0.12”) | 28 mm (1.10”) | 3 mm (0.12”) | 14 mm (0.55”) |
| DL | 3 mm (0.12”) | 7 mm (0.28”) | 3 mm (0.12”) | 14 mm (0.55”) |
| C6 | 3 mm (0.12”) | 3 mm (0.12”) | 3 mm (0.12”) | 14 mm (0.55”) |

# 1.13 INK CARTRIDGE

## 1.13.1 Black Ink Cartridge

| | |
|---|---|
| Type: | Exclusive Cartridge |
| Color: | Black |
| Print Capacity: | 540 pages/A4<br>(ISO/IEC 10561 Letter Pattern at 360 dpi) |
| Ink Life: | 2 years from date of production |
| Storage Temperature: | |
| Storage: | -20 °C to 40 °C (within a month at 40 °C) |
| Packing: | -30 °C to 40 °C (within a month at 40 °C) |
| Transit: | -30 °C to 60 °C (within 120 hours at 60 °C and within a month at 40 °C) |
| Dimension: | 20.1 mm (W) x 66.85 mm (D) x 38.5 mm (H) |
| Weight: | 37 g |

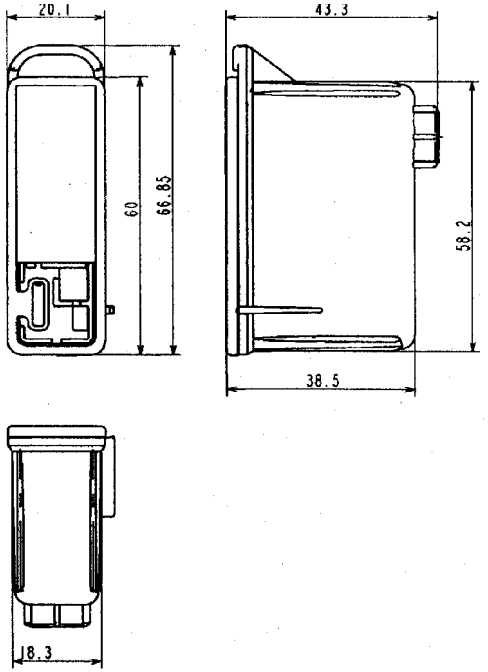



**Figure 1-9. Black Ink Cartridge**

## 1.13.2 Color Ink Cartridge

| | |
|---|---|
| Type: | Exclusive Cartridge |
| Color: | Magenta, Cyan, Yellow, Light Cyan, Light Magenta |
| Print Capacity: | 220 pages / A4 (360 dpi, 5% duty each color) |
| Ink Life: | 2 years from date of production |
| Storage Temperature: | |
| Storage: | -20 °C to 40 °C (within a month at 40 °C) |
| Packing: | -30 °C to 40 °C (within a month at 40 °C) |
| Transit: | -30 °C to 60 °C (within 120 hours at 60 °C and within a month at 40 °C) |
| Dimension: | 49.1 mm (W) x 66.85 mm (D) x 38.5 mm (H) |
| Weight: | 88 g |

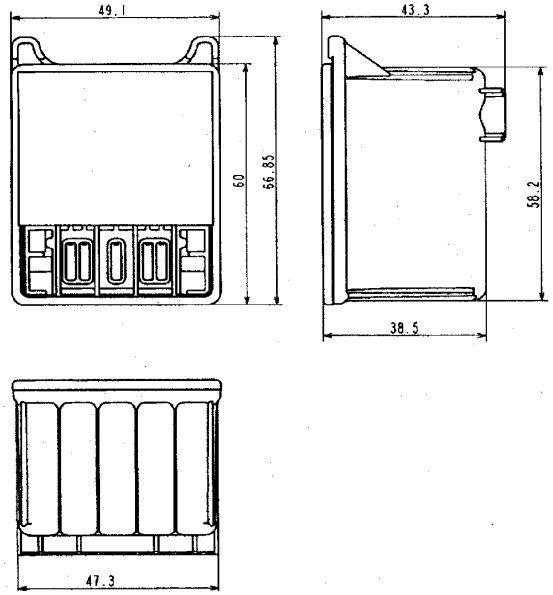



**Figure 1-10. Color Ink Cartridge**

*Note 1: Ink cartridge can not be refilled. The ink cartridge is prepared only for article of consumption.*

*Note 2: Do not use the ink cartridge which contains life-expired ink.*

*Note 3: Ink will be frozen under -18~-21°C environment; however, it will be usable after placing it more than 3 hours at room temperature.*

## 1.14 Accessories and Option

- Standard accessories
  - Instruction manual
  - Ink cartridge (black, color)
  - CD-ROM (Printer driver, utility)
  - Roll paper holder
- Option
  - Preview monitor

## 1.15 Changing the Model Name

By setting the proper values in addresses 5EH and 60H to 7DH in EEPROM, the Device ID and the model name in the BDC-ID can be changed. The other fields other than the model name are fixed and cannot be changed.

**Table 1-12. Setting the Model Name**

| | EEPROM setting | | Device ID bytes counter | MDL value for Device ID and BDC-ID |
|---|---|---|---|---|
| | 5EH | 60H~7DH | | |
| World Standard Device (Euro, Asia) | 00H | don't care | [00H]<br>[4EH (51H)] | MDL:<br>Stylus Photo 895; |
| Japanese Standard Device | 01H | don't care | [00H]<br>[46H (49H)] | MDL:<br>PM-790PT; |
| Custom | 02H | <Model Name String) | [00H]<br>[37H(4AH)+nnx2]* | MDL:<br><Model Name String> |
| World Standard Device (US) | 03H | don't care | [00H]<br>[51H (54H)] | MDL:<br>Stylus Photo 785EPX; |

* The values parenthesis are used when IEEE 1284.4 is valid. [nn] indicates the number of bytes in <Model Name String> stored in E2H-FFH. " 00H" should be place at the end of the model name string.

CHAPTER

# 2

# OPERATING PRINCIPLES

Download Free Service Manual and Resetter Printer at http://printer1.blogspot.com

# 2.1 Overview

This section describes the operating principles of the printer mechanism and electrical circuit boards. The Stylus PHOTO 895/785EPX has the following boards:

- ☐ Main board: C408 MAIN
- ☐ Power supply board: C408 PSB/PSE
- ☐ Monochrome panel board: C408 PNL
- ☐ Printer panel board: C408 PNL-B

## 2.1.1 Printer Mechanism

The printer mechanism for Stylus PHOTO 895/785EPX is designed newly. But, the basic component of the printer mechanism is same as previous product.
This printer consists of Print Head, Carriage Mechanism, Paper Feeding Mechanism, Paper Loading Mechanism, Ink System (Pump Mechanism, Cap Mechanism, and Carriage Lock Mechanism).

Like other EPSON ink jet printers, the Stylus PHOTO 895/785EPX is equipped with three stepping motors; one for ASF/Pump mechanism, one for Paper feeding mechanism and one for carriage mechanism. ASF unit uses rear entry front eject system. This ASF unit is also designed so that the single LD roller loads the paper to the printer mechanism. For cap assembly, Stylus PHOTO 895/785EPX uses valveless mechanism.

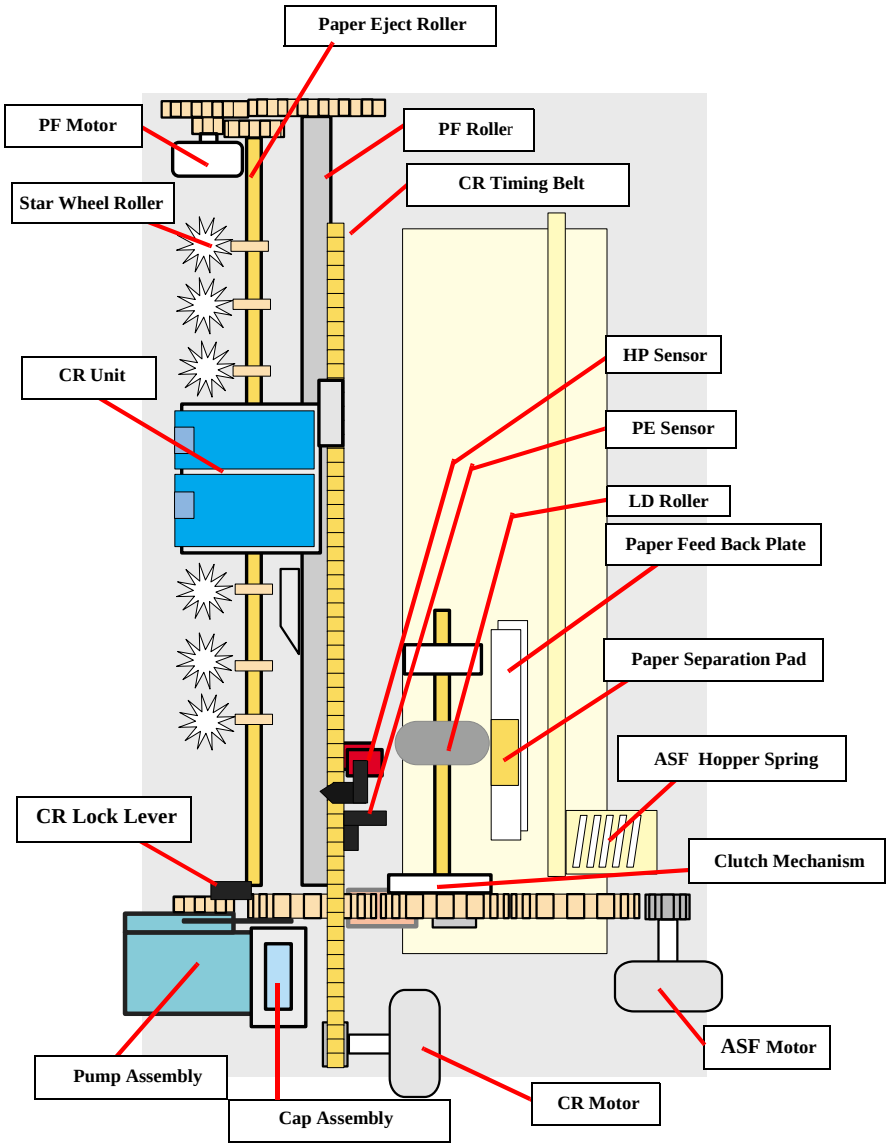



**Figure 2-1. Printer Mechanism Block Diagram**

## 2.1.2 Printhead

The printhead uses a new developed U-CHIPS head and Stylus PHOTO 895/785EPX can perform multiple shot printing and variable printing.

The CSIC is mounted on the ink cartridge. By storing ink life data, this IC makes it possible to control the ink in ink cartridge unit.

The basic operating principles of the printhead, which plays a major role in printing, are the same as previous models; on-demand method which uses PZT (Piezo Electric Element). In order to uniform the amount of ejecting ink, the printhead has its own head ID (13 digits for this printhead) which adjust PZT voltage drive features.
The printhead stores the head ID to EEPROM and generates appropriate PZT drive voltage to prevent amount of ink from varying by printheads.

Following explains printhead basic components.

- PZT
  PZT is an abbreviation of Piezo Electric Element. Certain amount of voltage expands and contracts PTZ. The drive wave generated on MAIN board drives PZT and PZT pushes the top cavity which has ink stored to discharge the ink from each nozzle on the nozzle plate.
- Ink Cavity
  The ink absorbed from the ink cartridge goes through the filter and then is stored temporarily in this tank called “cavity” until PZT is driven.
- Nozzle Plate
  The board with nozzle holes on the printhead surface is called Nozzle Plate.
- CSIC Connection Circuit
  This circuit connects the CSIC mounted on the ink cartridge and the main board. One end of the wire harness connects with the print head cable to the main board.
- Filter
  When the ink cartridge is installed, if any dirt or dust around the cartridge needle is absorbed into the head, there is a great possibility of causing nozzle clog and disturbance of ink flow, and finally causing alignment failure and dot missing. To prevent this problem, a filter is set below the cartridge needle, where ink is filtered.

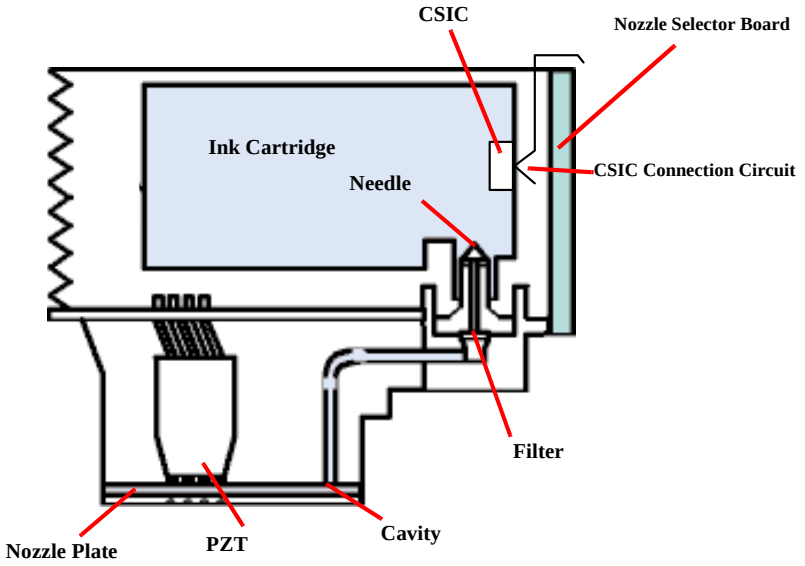



**Figure 2-2. Printhead Sectional Drawing**

- Nozzle Layout
  Black: 48 nozzles (120 dpi)
  Color: 48 nozzles x5(Cyan, Magenta, Yellow, Light cyan, Light magenta)(120dpi)

The nozzle layout when viewed from the back surface of the head is shown below.

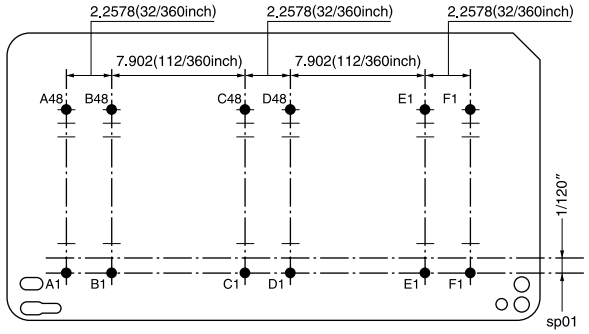



**Figure 2-3. Nozzle Layout**

### 2.1.2.1 Printing Process

This section explains the process in which the printheads of On-Demand inkjet printers eject ink from each nozzle.

1. Normal State:
   When no printing signal is sent from PC, or no PZT drive voltage is applied, PZT does not change shape, therefore PZT does not squeeze the cavity. Ink pressure inside the cavity is kept normal.
2. Ejecting State:
   When the print signal is output from the C408 MAIN board, IC (Nozzle Selector) located on the printhead unit latches data once by 1-byte unit. An appropriate PZT latched by the nozzle selector is pushed into the cavity by the common voltage applied from the main board. By this operation, ink stored in the cavity spurts out from nozzles.

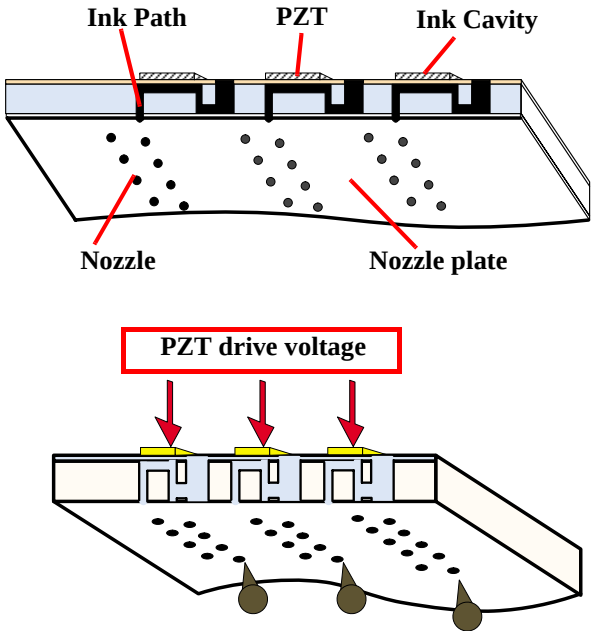



**Figure 2-4. Printhead Printing Process**

### 2.1.2.2 Printing Method

For print dot system, Stylus PHOTO 895/785EPX has the following two kinds of printing modes.

- Multiple shot printing
- Variable dot printing

The above two printing modes are automatically selected depending on the media and the resolution setting of the printer driver. The following explains each printing mode.

- Multiple shot printing
  This printing mode is developed to improve the print quality on plain paper or transparencies in low resolution. The multiple shot printing mode uses normal dot and the number of dot shots varies from 1 shot to maximum 3 shots depending on the print data to enable sharp image output even in a low resolution.
- Variable dot printing
  This printing mode is developed to improve the print quality on exclusive paper. This mode is basically the same as variable dot printing mode used on other products ; micro dot, middle dot, and large dot compose this mode. Print dot size varies according to print data and this mode enables even sharper image output on exclusive paper.

## 2.1.3 Carriage Mechanism

The carriage mechanism consists of Carriage motor (CR motor), Carriage unit (including printhead), CR timing belt, CR guide shaft, platen gap adjustment mechanism, parallelism adjustment mechanism CR guide frame, CR home detector (HP/PE sensor) etc. The carriage mechanism moves the carriage back and forth according to the drive from the carriage motor. The following stepping motor is mounted to drive CR mechanism. (See the table below.)

**Table 2-1. Carriage Motor Specification**

| Items | Specifications |
|---|---|
| Type | 4-Phase/ 200-Pole HB Stepping motor |
| Drive Voltage | +42 V +/ - 5% (DRV IC voltage) |
| Coil Resistance | 7.8 Ω +/ - 10% (per phase at 25 degree) |
| Inductance | 14 mH +/ - 20%(1KH 1VmA) |
| Drive Method | Bi-Polar drive |
| Driver IC | LB1946 |

The drive from CR motor is transferred to the CR unit via CR timing belt. And the CR home position is detected with the HP sensor. This sensor is available as CR HP detector only in the HP (home position) detection sequence & pump operation sequence.

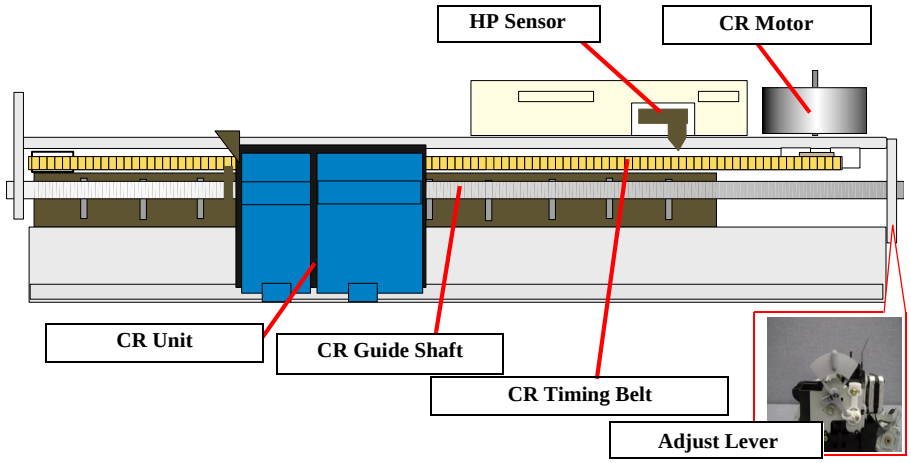



**Figure 2-5. Carriage Mechanism (Top view)**

CR home position is detected with the HP sensor and the detection plate molded in the CR unit as following figure. When the CR home position is detected with this sensor, HIGH signal is output to the CPU.

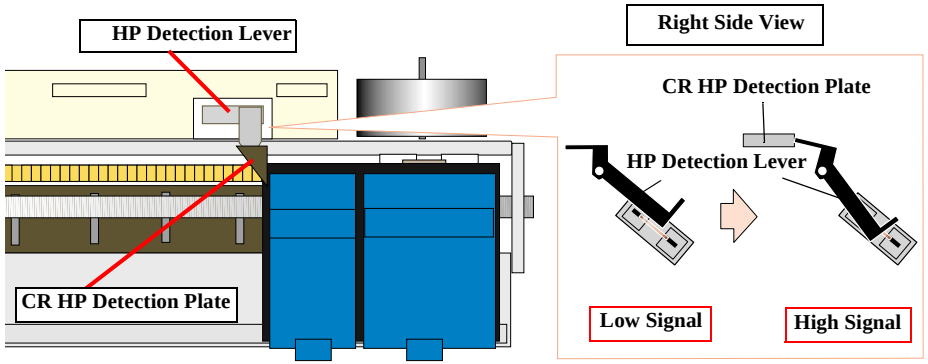



**Figure 2-6. CR Home Position**

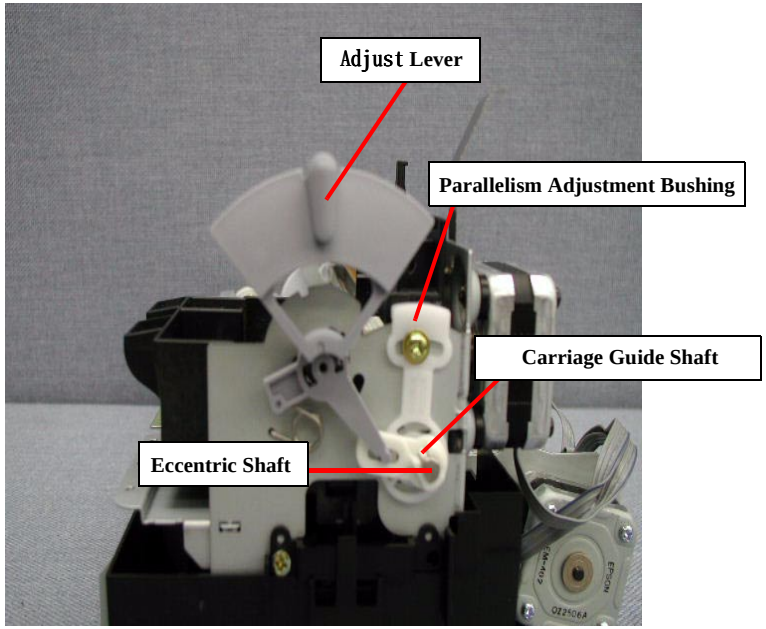



**Figure 2-7. Outline of Adjust lever**

The adjust lever is mounted on the right end of the carriage guide shaft. The carriage guide shaft is an eccentric shaft and is rotated by operating the adjust lever, and thus narrows (1.2 mm) or widens (2.1 mm) the gap (platen gap; PG) between the platen surface and the print head. This is a mechanism for use by the user to select the appropriate PG in accordance with the print results or other conditions such as the amount of curl in the paper. Also, the parallelism adjustment bushings mounted on the left and right ends of the carriage guide shaft adjust the amount of parallelism between the carriage guide shaft and the platen.

**Table 2-2. Adjust Lever Setting**

| Lever Setting Position | Amount of PG Correction |
|---|---|
| Front Side | 0mm （PG：1.2mm） |
| Deep Side | +0.9mm （PG: 2.1mm） |

## 2.1.4 Paper Feeding Mechanism

The paper feeding mechanism consists of Paper feed motor (PF motor), PF roller, Paper eject roller, Star wheel roller, and so on. The paper feeding mechanism feeds paper loaded from ASF using the PF roller and Paper Eject Roller & Star wheel roller. For this mechanism, the PF motor mentioned in the right Table 2-3."PF Motor Specifications" is used on this product.

The drive of the PF motor is transfer to the PF roller and the Paper Eject Roller as following Figure 2-8. "Paper Feeding Mechanism". Following shows you how to transfer the PF motor drive to the PF roller and the Paper Eject Roller.

☐ PF motor drive transmission path

•PF roller path
PF Motor Pinion Gear (CW) Æ Combination Gear 16, 21.6 (CCW) Æ Spur Gear 73.6 (CW)

•Paper eject roller path
PF Motor Pinion Gear (CW) Æ Combination Gear 11.6, 36.8 (CCW) Æ Spur Gear 25.6 (CW)

**Table 2-3. PF Motor Specifications**

| Item | Description |
|---|---|
| Motor type | 4-Phase/ 200-Pole HB Stepping motor |
| Drive voltage | +42 V +/ - 5% (DRV IC voltage) |
| Coil Resistance | 7.8 Ω +/ - 10% (25°C, per phase) |
| Inductance | 13.5 mH +/ - 20%(1kH 1Vrms) |
| Driving method | Bi-Polar drive |
| Driver IC | LB1946 |

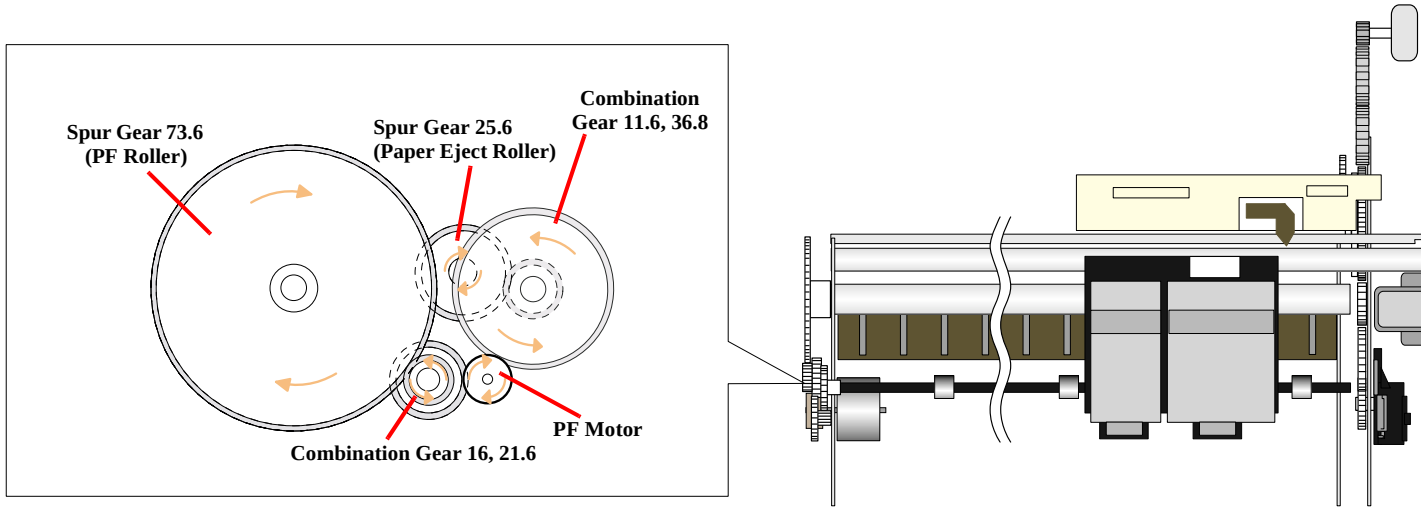



**Figure 2-8. Paper Feeding Mechanism**

Paper loaded from ASF is advanced by the following roller.

- Paper feed roller & Paper guide roller (assembled on the Top Frame) Æ Paper eject roller & Star wheel roller (assembled on the Paper eject frame).

Additionally, the top & end of the paper is detected with the PE sensor.
In case the PE sensor dose not detect the paper in the paper loading sequence, the printer detects the “Paper out error”. If the paper is detected after complete the paper eject sequence, the printer detects the “Paper jam error”.

## 2.1.5 Paper Loading Mechanism (ASF Unit)

The Paper loading mechanism is positioned at the printer rear. The Paper loading mechanism loads paper at the ASF unit and feeds paper to the PF roller.

This ASF unit consists of ASF motor, LD roller, Pad holder (Paper return plate), ASF Frame, Hopper, and so on.
Table shows the ASF motor specifications.

**Table 2-4. ASF Motor Specifications**

| Item | Description |
|---|---|
| Motor type | 4-Phase/ 200-Pole HB Stepping motor |
| Drive voltage | +42 V +/ - 5% (DRV IC voltage) |
| Coil Resistance | 7.8 Ω +/ - 10% (25°C, per phase) |
| Inductance | 13.5 mH +/ - 20%(1kH 1Vrms) |
| Driving method | Bi-Polar drive |
| Driver IC | LB1946 |

For the major feature of this ASF unit, ASF HP sensor is not used and the single LD roller is built in the ASF unit.
Drive sent from the ASF motor is always transmitted to the ASF unit side. But, the Change lever and the Clutch mechanism switch ON/OFF drive to the LD roller.

Drive from the ASF motor is transmitted to the ASF unit as described below:

- Switch the ASF motor drive to ASF unit side
  ASF Motor pinion gear rotates CCW direction with a specific steps
  Æ Combination Gear 14.4, 38.4 (CW) Æ Combination Gear 37.6, 44.4 (CCW) Æ Spur Gear 23.2 (CW) Æ Spur Gear 35.2 (CCW) Æ Release the Clutch mechanism lock position

Following Figure 2-9. "Switch the ASF Motor Drive to ASF Unit Side" shows the switching path for ASF motor drive to ASF unit side.

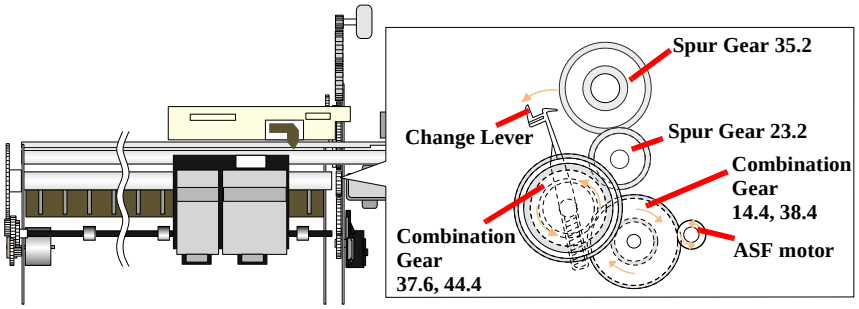



**Figure 2-9. Switch the ASF Motor Drive to ASF Unit Side**

☐ Transfer the ASF motor drive to LD roller
ASF Motor pinion gear rotates CW directionÆ Combination Gear 14.4, 38.4 (CCW) Æ Combination Gear 37.6, 44.4 (CW) Æ Change Lever rotates (CW) Æ Spur Gear 23.2 (CCW) Æ Spur Gear 35.2 (CW) (include the clutch mechanism) Æ LD roller (CW).

Following Figure 2-10, "ASF motor drive transmission path" shows the ASF motor drive transmission path to the LD roller unit built in the ASF unit. The LD roller is assembled on the same shaft that spur gear 35.2 is assembled.

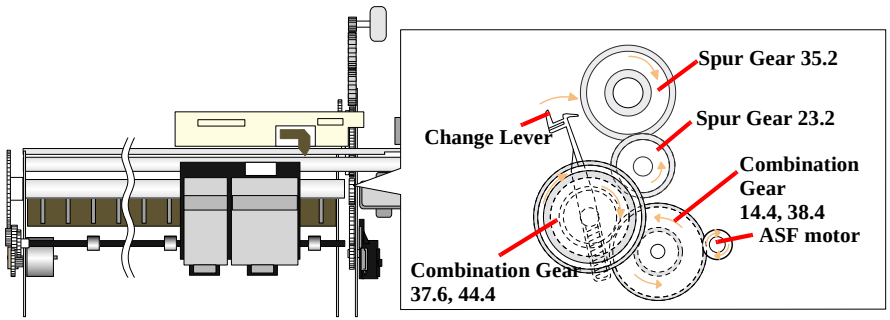



**Figure 2-10. ASF Motor Drive Transmission Path**

When the ASF motor torque is switched to the ASF unit side by the clutch mechanism, the function of the ASF mechanism varies depending on the rotational direction of the ASF motor, as shown in the table below.

**Table 2-5. ASF Unit Function & ASF Motor Rotational Direction**

| Directions | Corresponding Functions |
|---|---|
| Clockwise (*1) | • Picks up and loads paper |
| Counterclockwise (*1) | • Release the DE lever & Clutch mechanism |

(*1): The ASF Motor rotational direction = seen from the right side of the printer.

☐ Clutch Mechanism
Unlike the previous products, this product dose not have a ASF HP sensor. Instead of the ASF HP sensor, Change lever and the Clutch mechanism are used to detect the ASF home position. Following figures describe the mechanism.

***NOTE:***

**The Clutch gear is molded on the back side of the Spur gear 35.2 such as Combination gear.**

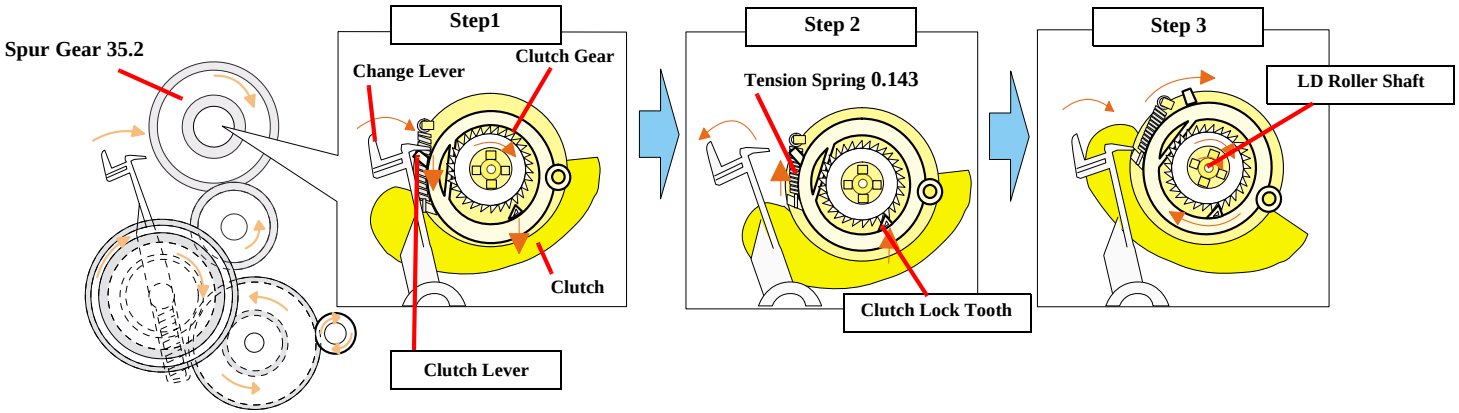



**Figure 2-11. Disengage & Clutch mechanism**

The Clutch mechanism transmits the ASF motor drive to the LD roller shaft only when the Clutch gear rotates CW direction after the Change lever releases the Clutch lever. If the Clutch gear rotates CCW direction, the ASF motor drive is not transmitted to the LD roller. This is due to the combination of the shape of the Clutch gear and the Clutch lock tooth such as described on the figure.

1. When the ASF motor rotates CW direction, the Change lever is set on the Clutch lever and the Clutch is pushed down as above Step1's figure. As the result, the Clutch gear is released from the Cluck lock tooth and the drive from the ASF motor is not transmitted to the LD roller shaft.
2. When the ASF motor rotates CCW direction in the above Step2's figure, the Change lever moves to the left direction with the CCW rotation of Combination gear 37.6, 44.4. The Clutch turns back to the engagement position by the tension force of the Tension spring 0.143 and the Clutch gear is engaged with the Clutch lock tooth as above Step2's center figure.
3. When the ASF motor rotates CW direction in the above Step3's figure, the Change lever moves to the right direction with the CW rotation of the Combination gear 37.6, 44.4. And the drive from the PF motor is transmitted to the LD roller shaft via Clutch gear and Clutch lock tooth.
4. The LD roller shaft rotates about 360 degree and the Change lever push the Clutch lever and the ASF motor drive is interrupted. This position is the ASF home position.

☐ Paper Return Plate (Pad holder)

Unlike the previous products, The Paper return plate is built in the ASF frame instead of the Paper return lever. The Paper separation pad is also stacked on the plate.

It works with the spring force of the Torsion spring 25.7 (mounted in the ASF frame) as following figure.

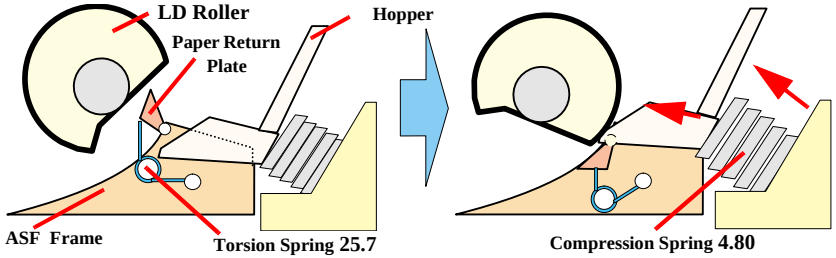
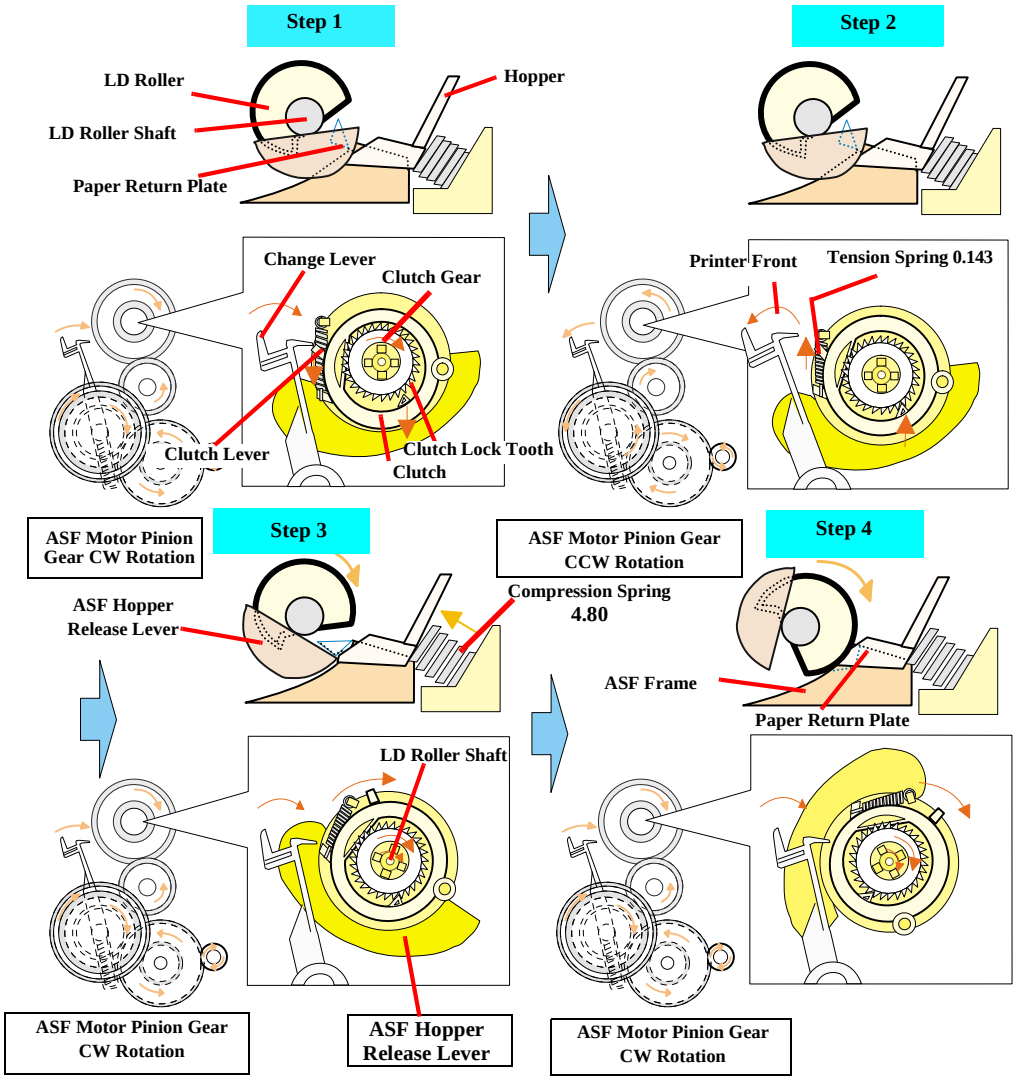



**Figure 2-12. Paper Return Plate**

The Paper return plate is set to return the paper to the paper stand-by position in the ASF unit when the ASF unit is in the standby mode. When the paper is fed with the LD roller, the Paper return plate is stored in the ASF frame by the LD roller. Following figures show you the ASF paper loading sequence and the operation of the each mechanism.

When the paper is advanced with the ASF unit, Change lever push down the Clutch lever as right figure and the Clutch lock tooth is disengaged from the Clutch gear. As the result, the drive from the ASF motor is interrupted and the LD roller dose not rotate.
This position is the ASF home position.
The Paper return plate is set to avoid that the paper is slipped down from the paper set position.

The ASF motor pinion gear rotates CW direction and the drive from the ASF motor is transmitted to the ASF LD roller shaft through the Clutch lock tooth and the Clutch gear.
The ASF hopper release lever rotates with the ASF LD roller and release the ASF Hopper. The ASF hopper is pushed with the Compression spring 4.80 and the paper is picked up with the ASF LD roller.




When the ASF motor is rotated CCW direction, the Change lever moves to the printer front side with the CCW rotation of the ASF motor pinion gear and releases the Clutch lever. As the result, the Clutch turns back to the engagement position by the tension force of the Tension spring 0.143.
And the Clutch lock tooth is OK with the Clutch gear to transmit the ASF motor drive as right figure.

The ASF LD roller rotates CW direction moreover and the Paper return plate is stored under the ASF frame.
The paper is advanced up to the PF roller. and the ASF LD roller & the clutch rotate to the “Step1” position. The Clutch lever is locked with the Change lever.
The drive from the ASF motor is interrupted and the drive is not transmitted to the LD roller side.

**Figure 2-13. ASF Paper Loading Sequence**

## 2.1.6 Ink System Mechanism

Ink system mechanism consists of pump unit (include the CR lock lever) and capping mechanism. Ink system mechanism drives the pump unit that presses cap to the printhead and ejects ink from ink cartridge, head cavity and cap to the waste ink pad.

### 2.1.6.1 Pump Unit & Wiper mechanism

The pump unit is driven by ASF motor. ASF motor drive is always transmitted to the paper feeding mechanism and pump unit through the following gears. Refer to the Figure 2-15. "ASF Motor Drive Transmission Path to the Pump Unit".

ASF Motor Pinion Gear (CW) Æ Combination Gear 14.4, 38.4 (CCW) Æ Combination Gear 37.6, 44.4 (CW) Æ Spur Gear 36.8 (CCW) Æ Combination Gear 9.6, 24 (CW)Æ Pump Unit Gear (CCW)

The Pump unit and Wiper mechanism drives according to the ASF motor rotational direction, as shown in the right table.

**Table 2-6. ASF Motor Rotational Direction & Ink System Mechanism**

| Directions | Functions |
|---|---|
| Counterclockwise (*1) | • Sets the wiper.<br>• Absorbs ink by the pump unit<br>• Set the CR lock lever |
| Clockwise (*1) | • Resets the wiper. |

(*1): The ASF Motor rotational direction = seen from the right side of the printer.

Following figure shows the overview of the pump mechanism operation

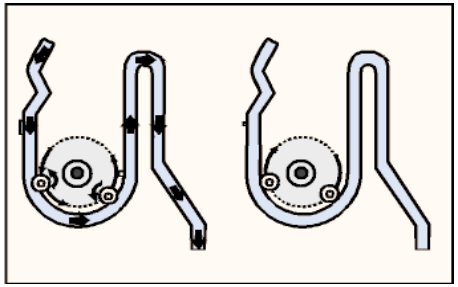


**Figure 2-14. Pump Mechanism**

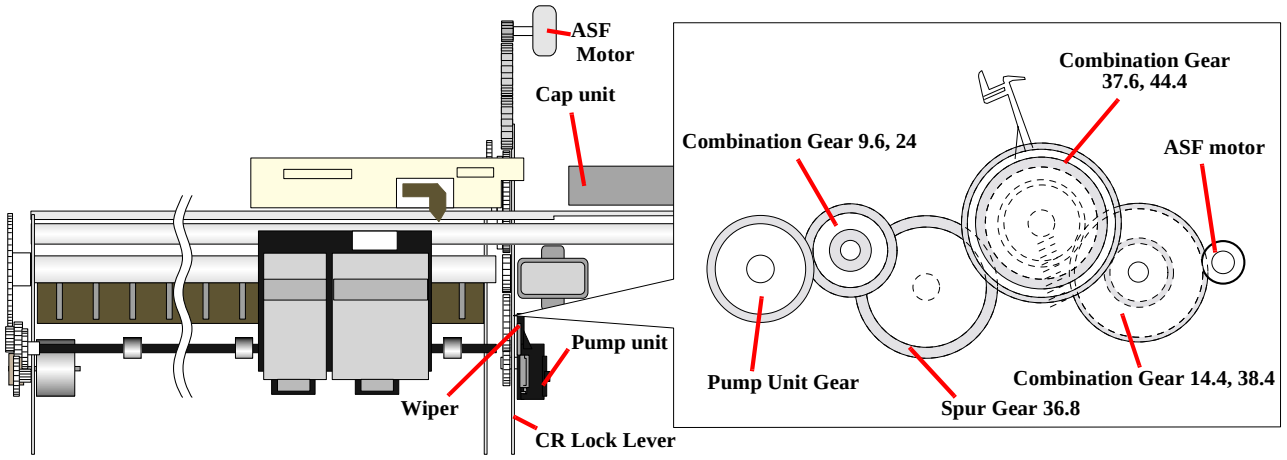



**Figure 2-15. ASF Motor Drive Transmission Path to the Pump Unit**

### 2.1.6.2 Capping Mechanism

The capping mechanism covers the printheads with the cap holder to prevent the nozzle from increasing viscosity when the printer is in stand-by mode or when the printer is off. This product has valveless cap system. Air valve function used for the previous models pumps and ejects ink only inside the cap by absorbing ink with the valve open. By opening the Air valve, the negative pressure is decreased and only the ink inside the cap is ejected. (the ink is not absorbed from Ink cartridge or head cavity.)
But, valveless cap system, this operation is done out side of the capping area.
The CR moves to left side of the Cap assembly and the pump absorbs the ink inside the cap.

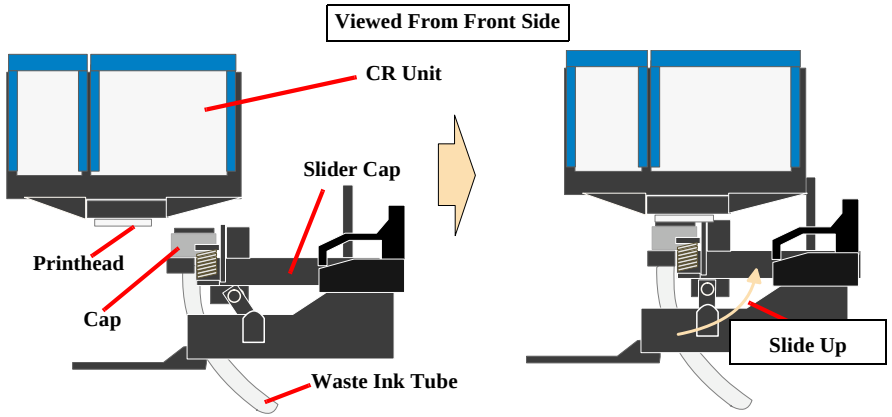



**Figure 2-16. Cap Mechanism**

## 2.2 Electrical Circuit Operating Principles

The electric circuit of the Stylus PHOTO 895/785EPX consists of the following boards.

- ☐ Main board: C408 MAIN
- ☐ Power supply board: C408 PSE
- ☐ Monochrome panel board: C408 PNL
- ☐ Printer panel board: C408 PNL-B

This section provides operating principles of C408 MAIN Board and C408 PSE Board. Refer to Figure 2-17. "Electric Circuit" for the major connection of the each boards and their roles.

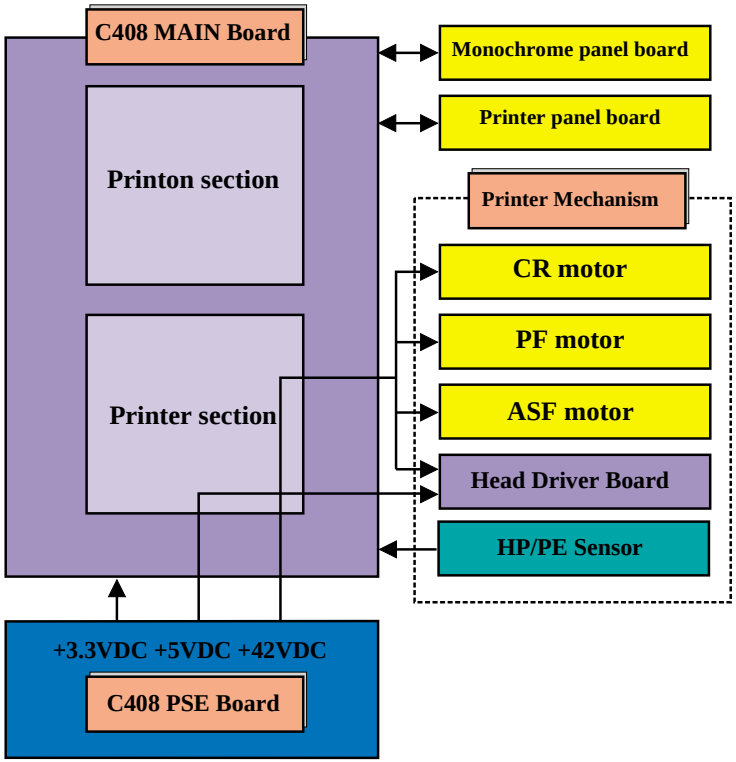



**Figure 2-17. Electric Circuit**

### 2.2.1 C408 PSE board

The power supply boards of Stylus PHOTO 895/785EPX use a RCC (Ringing Chalk Converter) circuit, which generates +42VDC for drive line and +5VDC, +3.3VDC for logic line to drive the printer. The application of the output voltage is described below.

**Table 2-7. Application of the DC Voltages**

| Voltage | Application |
|---|---|
| +42VDC | • Motors (CR Motor, PF Motor, ASF motor)<br>• Printhead common voltage<br>• Printhead nozzle selector 42V drive voltage |
| +5VDC | • C408 MAIN control circuit logic<br>• Sensor |
| +3.3VDC | • C408 MAIN control circuit logic |

AC voltage input from AC inlet first goes through filter circuit that removes high frequency components and is then converted to DC voltage via the rectifier circuit and the smoothing circuit. DC voltage is then lead to the switching circuit and FET Q1 preforms the switching operation. By the switching operation of the primary circuit, +42VDC is generated and stabilized at the secondary circuit. This +42VDC generated by the secondary circuit is converted to +5VDC, +3.3VDC by the chopping regulator IC of the secondary circuit.

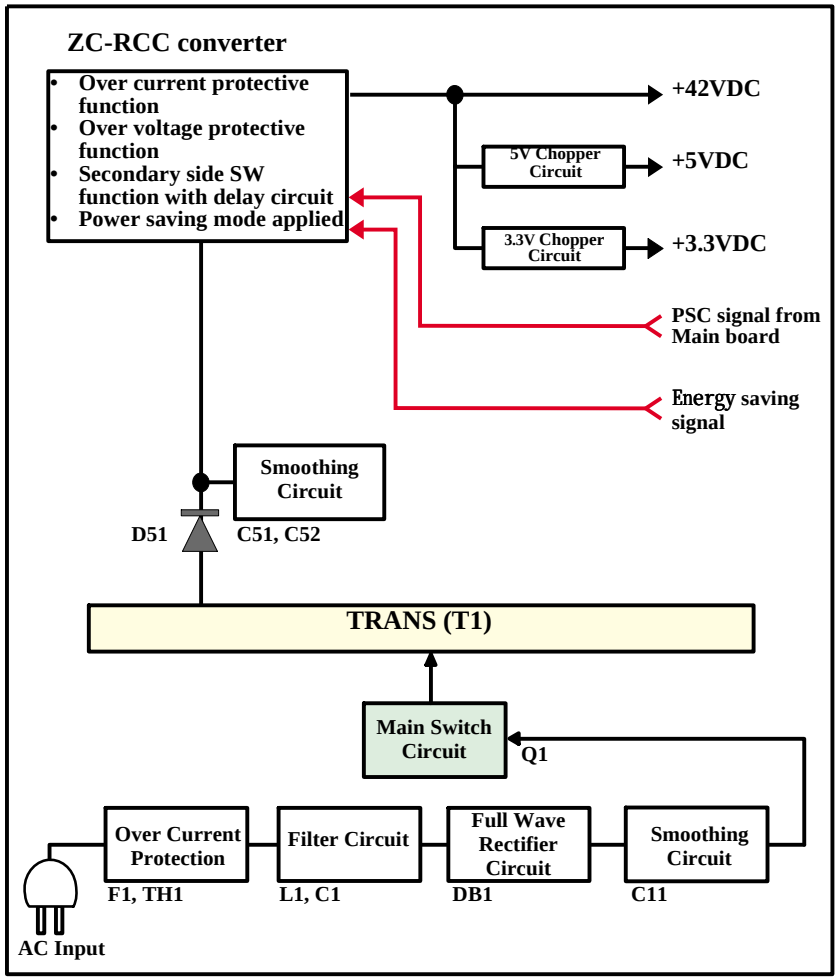



**Figure 2-18. C408 PSE Board Block Diagram**

The C408 PSE board has the various control circuits to stop voltage output if a malfunction occurs on the power supply board or the main board while the printer mechanism is on duty. Following explains each control and protection circuit.

### 2.2.1.1 Process how 42VDC, 5VDC and 3.3VDC are generated

This section provides the description how +42VDC, +5VDC and +3.3VDC are generated from the supplied power supply referring to the Figure 2-18, "C408 PSE Board Block Diagram".

1. Regardless of the state of the power switch (On or OFF), the voltage is always applied to the primary side of the power supply board from the moment or at the state that AC-plug is plugged in. At this time, F1 plays a role of preventing AC100V from coming into the F1.
   L1 also prevents high harmonic wave noise generated in the RC circuit filter which consists of C1 from going out, and eliminates the noise from outside here.
2. The AC is full-wave rectified by the diode bridge DB1, and converted to $\sqrt{2}$ x AC in voltage by the smoothing electrolytic capacitor C11.
3. The pressured up direct current turns Q1 on through the starting resistor and starts the primary side of the circuit.
4. When the primary side is On, the energy (current) led by the electromagnetic induction through the trans (T1) does not flow to the secondary side since the diode (D51) on the secondary side is installed in the opposite direction.
5. When the energy which is charged in the trans is reaching the saturated state, the voltage which makes Q1 on becomes weak gradually. At the point that this voltage drops at the certain voltage, C13 absorbs the current in the opposite direction and Q1 is quickly shut off by the resulting sharp drop.
6. When the primary side is turned off, the energy charged in the T1 is opened according to the diode (D51) direction which is installed on the secondary side. Basically, 42 V DC is output by these circuit operations and the number of T1 spiral coil.
7. +5VDC and +3.3VDC are generated by pressured down this +42VDC as power supply. The 5V chopper circuit (IC51) and 3.3V chopper circuit (IC151) pressures down the +42VDC and generates precise +5VDC and +3.3VDC by chopping off the output, forming the standard sawtooth wave form by the outer RC integration circuit.

### 2.2.1.2 Protection circuit

The C408 PSE board has the various control circuits to stop voltage output if a malfunction occurs on the power supply board or the main board or while the printer mechanism is on duty. Following explains each control and protection circuit.

- +42VDC line constant voltage control circuit:
  The output of +42V line is monitored by the ZC-RCC converter detection circuit. This circuit prevents voltage drop so that the output voltage can be held at a constant level.
- +42V line over current protection circuit:
  The output voltage extremely drops when the +42V line becomes the over current condition. The ZC-RCC converter feeds back the occurrence of over voltage to the primary side via the same IC if it detects the voltage drop in the 42V line. The primary side stops switching and protects the printer electric circuit and mechanism. Reset is automatically performed.
- +42V line over voltage protection circuit:
  If the +42V line exceeds 58V, the ZC-RCC converter detects the over voltage and feeds back the occurrence of over voltage to the primary side via the same IC. The primary side stops switching and protects the printer electric circuit and mechanism.
- +5VDC, +3.3VDC line constant voltage/current control circuit:
  +The +5V and +3.3V line output currents and output voltage are monitored by the self-excited down chopper circuit (IC51, IC151). The monitor information is input to the internal comparator and stabilization circuit in IC. The self-excited down chopper circuit (IC51, IC151) stops the output if the over current is detected.
- +5V, +3.3V line over current protection circuit:
  The ZC-RCC converter feeds back the occurrence of over voltage to the primary side via the same IC when the +5V or +3.3V line becomes the over current condition. The primary side stops switching and protects the printer electric circuit and mechanism. It is possible to reset only by turning on the power again.
- +5V, +3.3V line over voltage protection circuit:
  If the +42V line exceeds 9V, the ZC-RCC converter detects the over voltage and feeds back the occurrence of over voltage to the primary side via the same IC. The primary side stops switching and protects the printer electric circuit and mechanism.

### 2.2.1.3 PS Control Function

This power supply circuit enables to supply the voltage to the 5V, 3.3V and 42V lines for about 30 seconds by using the secondary power supply even if the power is turned off with the power switch on the operation panel. This procedure ensures the following operation even if the printer's power switch is turned off while printing.

- When the CR unit is not at the home position while the printer is printing, the CR unit stops printing, then the power is shut down after returning to the home position and finishing the locking action.
- When the papers are stored in the printer mechanism in the condition supplied by the ASF even if the printer is not printing, the paper is ejected and then the power is shut down.

### 2.2.1.4 Power saving mode

The power supply circuit activates the power saving mode by the signal ESAVE from the control circuit. The +42V line repeats rise/fall in the power saving mode.

## 2.2.2 C408 MAIN Board

The printer mechanism is controlled by C408 MAIN.
See Figure for the C408 MAIN board block diagram.

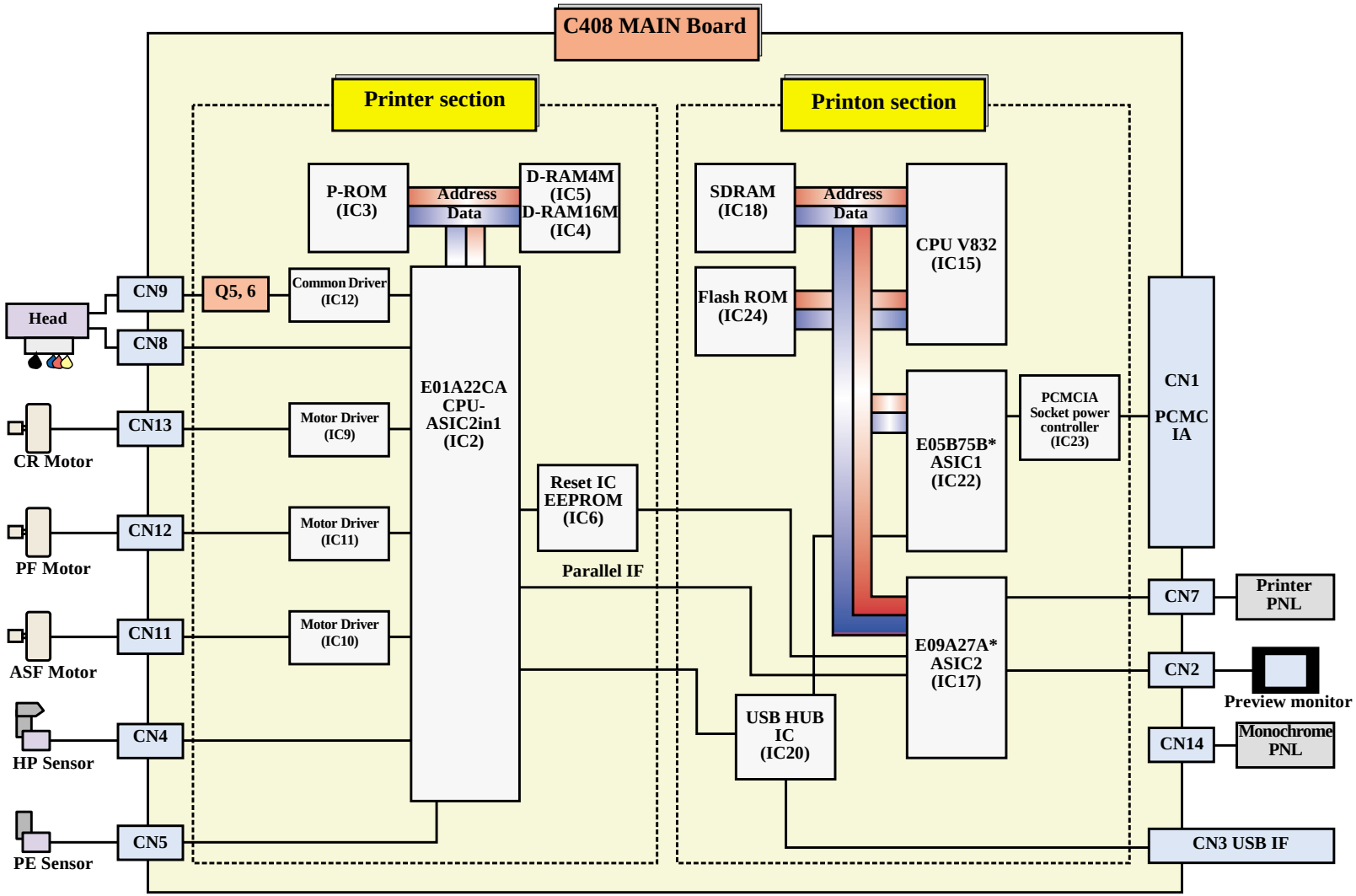



**Figure 2-19. Block Diagram for the C408 MAIN Board**

Following shows you the major characteristic of this main board.

- Use of the newly designed board C408MAIN
  This product uses the newly developed C408MAIN board with the PCMCIA card slot, preview monitor (option) and monochrome panel (LCD) added. This board is divided into the printer and Printon sections. The same control as the conventional models is operated in the printer section, and the control for the PCMCIA slot, monochrome panel and printer PNL is operated in the Printon section.
- Applicable to the ECP mode
  The parallel IF, which connects the printer and Printon sections, can receive the high speed data by means of the DMA function up to at the maximum 500 kbytes/second. The product can also receive the data transmitted at the maximum 800 kbytes/second (ECP mode) in compliance with the IEEE1284 since it is applicable to the ECP mode.
- Applicable to the USB (Universal Serial Bus) Rev.1.1IF (Full speed/12 Mbps. without a hub)
- Motor current control by D/A of CPU and ladder circuit of resistors
- Use of united IC of the reset circuit and EEPROM for the simple system design.
- Low power consumption is realized by designing logic circuit on the 3.3V power supply. The following table shows the chips that operate by 3.3V and +5V.

**Table 2-8. 3.3V & 5V Drive Chips**

| +3.3V | +5V |
|---|---|
| • CPU | • Sensors |
| • P-ROM | • I/F Circuit |
| • D-RAM | • PNL Board |
| • SD-RAM | |

- Use of the HJFK image processing
- SDRAM is mounted.

### 2.2.2.1 Main elements

Following table provides the description of main element functions on the C408 main board.

**Table 2-9. Main Elements (Printer section)**

| IC | Location | Function |
|---|---|---|
| CPU-ASIC 2in1 E01A22CA | IC2 | 16bit CPU mounted on the MAIN board is driven by clock frequency 24MHz and controls the printer |
| PROM | IC3 | • Capacity 4/8/16MB, Bus= 16 bit<br>• Program for CPU or Program +CG |
| DRAM | IC5, IC4 | Bus= 16 bit, 4Mbit DRAM and 16Mbit DRAM |
| RTC9822 (Reset function, RTC, EEPROM compound IC) | IC6 | EEPROM section<br>• Default value setting<br>• Parameter backup<br>RESET section<br>• For +3.3V; reset when +2.5V is detected<br>• For +5V; reset when +4.2 is detected<br>• For +42V; reset when +36 is detected<br>TIMER section<br>• Electric double layer capacitor (0.33F) is used. |
| Common Driver | IC12 | Head drive control HIC<br>• Generates head common voltage. |
| Motor Driver | IC9 | CR motor drive IC |
| Motor Driver | IC11 | PF motor drive IC |
| Motor Driver | IC10 | ASF motor drive IC |

**Table 2-10. Main Elements (Printon section)**

| IC | Location | Function |
|---|---|---|
| CPU V832 | IC15 | • USB storage class target<br>• PCMCIA control<br>• Image processing<br>• Operating frequency: 47.6 MHz |
| ASIC1 E05B75B* | IC22 | • Package: 208pinPQFP<br>• Operating frequency: 47.6 MHz and 48 MHz |
| ASIC2 E09A27A* | IC17 | • Data communication with the printer section<br>• Start and finish of DMA by MWPACKU<br>• SW condition is read from the printer PNL and monochrome PNL.<br>• SW condition to the printer side is set from the CPU and can be output.<br>• JFK image processing<br>• Fraction processing function applicable to the MW packing function<br>• Clock synchronous serial interface<br>• The maximum 160 bit data are serial-exchanged and transmitted to the LCD drive. |
| PCMCIA Socket Power Controller MAX1602 | IC23 | • Package: 16 pin S.O Package |
| Flash ROM MBM29LV160TC/ BC | IC24 | • Capacity: 16/8Mbit Bus=16bit<br>• Program |
| SDRAM K4S641632D | IC18 | • Capacity: 64Mbit (1M x 16bit x 4bank), Bus=16bit<br>• System memory |
| USB HUB IC TUSB2036VF (TI) | IC20 | • Self power/pass power mode<br>• Applicable to full speed/low speed related to all Down Stream ports<br>• Applicable to the suspend/resume operation<br>• Suspend/status output |

### 2.2.2.2 Printhead Driver Circuit

The printhead driver circuit consists of the following two components:

- Common driver IC (IC12:E09A14RA) directly attached to the C408 MAIN board.
- Nozzle selector IC on the head board.

The common driver (IC12:E09A14RA) generates a reference drive waveform according to the output signals from the C408 MAIN board. The reference drive waveform is amplified by the transistors Q2 and Q3 and then transferred to the nozzle selector IC on the head board. Print data is converted to serial data by the CPU (IC2) and then sent to the nozzle selector IC on the head board. Based on the serial data, the nozzle selector IC determines the nozzles to be actuated. The selected nozzles are driven by the drive waveforms produced by the common driver. See Figure 2-20. "Printhead Driver Circuit" for the printhead driver circuit block diagram.

- Head common driver circuit
  The reference head drive waveform is produced in the common driver (IC12:E09A12RA) based on the following 12 signal lines output from the CPU (IC12); A0-A4, CLK1, CLK2, RST, FLOOR, DATA, DCLK, and E.
  By the DATA signal output from the CPU (IC9), the original data for the head drive waveform is written in the memory in the IC12. The addresses for the written data are determined by the A0 - A4 signals, and, of among, data used to determine the waveform angles is selected. Then, setting the selected data, producing trapezoid waveform value, and canceling the data are performed by the rising edges of the CLK1 and CLK2 signals.
- Head nozzle selector circuit
  Printing data is converted into serial data by the CPU (IC2). Then the converted data is allocated to the six rows, the number of the head nozzle rows, to be transferred to the nozzle selector through the six signal lines (HS01 to HS06). Data transmission from the CPU (IC2) to the nozzle selector synchronizes with the LAT signal and SCK clock signal. Referring to the transferred data, nozzles to be activated are selected, and the PZTs of the selected nozzles are driven by the drive waveform output from the head common driver.

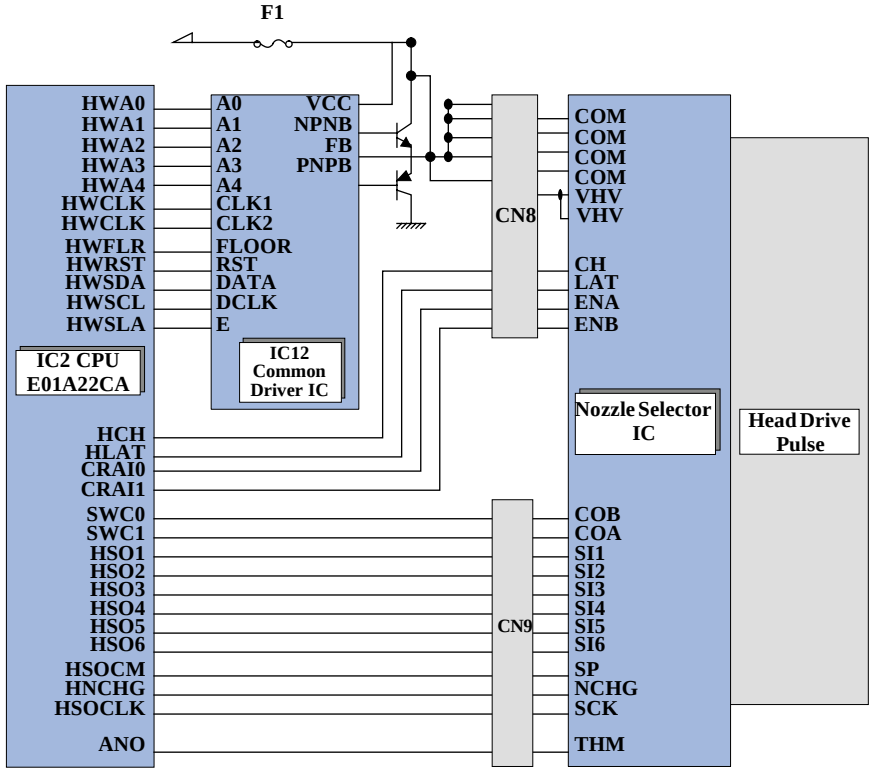



**Figure 2-20. Printhead Driver Circuit**

### 2.2.2.3 CR Motor Driver Circuit

The motor driver IC on the MAIN board drives CR motor. This product uses 4-phase 200-pole hybrid type stepping motor and performs constant current bi-polar drive.

CPU (IC2) converts CR motor phase control signal to LB1946 micro step drive form and outputs to motor driver IC (IC9) LB1946 from the each port. Based on this signal, IC9 determines the phase mode.

The current value on each phase is determined by CPU (IC2) and outputs from the each port to driver IC (IC9). Motor driver IC generates motor driver waveform based on these input signals and controls the motor. If the printer dose not receive any data from PC for 5 minutes, CPU set the motor drive current to 0 via the each port and the motor drive is turned off to save the power consumption.

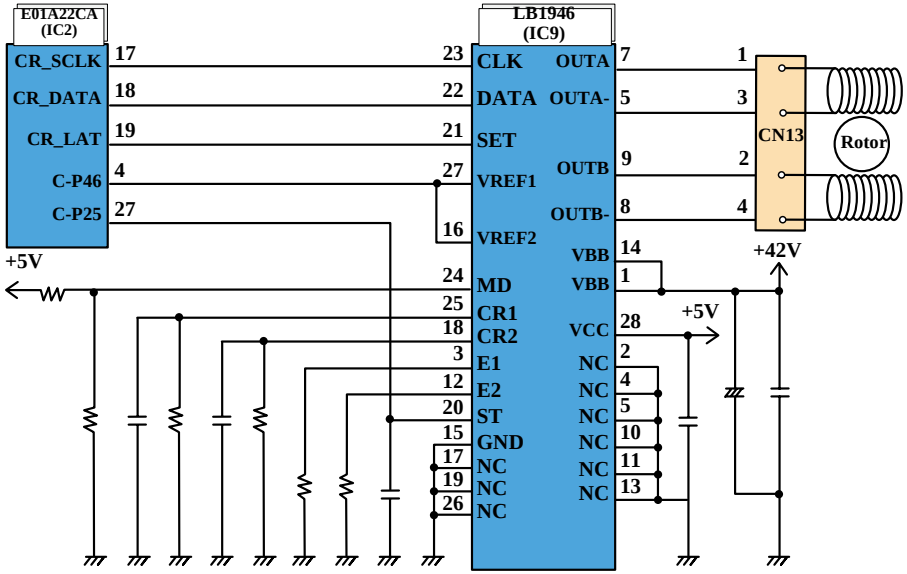



**Figure 2-21. CR Motor Driver Circuit Block Diagram**

### 2.2.2.4 PF Motor Driver Circuit

The motor driver IC on the MAIN board drives PF motor. This product uses 4-phase 200-pole hybrid type stepping motor and performs constant current bi-polar drive.

CPU (IC2) converts PF motor phase control signal to LB1946 micro step drive form and outputs to motor driver IC (IC11) LB1946. Based on this signal, IC11 determines the phase mode.

The current value on each phase is determined by CPU (IC2) and outputs from the each port to driver IC (IC11). Motor driver IC generates motor driver waveform based on these input signals and controls the motor. If the printer dose not receive any data from PC for 5 minutes, CPU set the motor drive current to 0 via the each port 104 and the motor drive is turned off to save the power consumption.

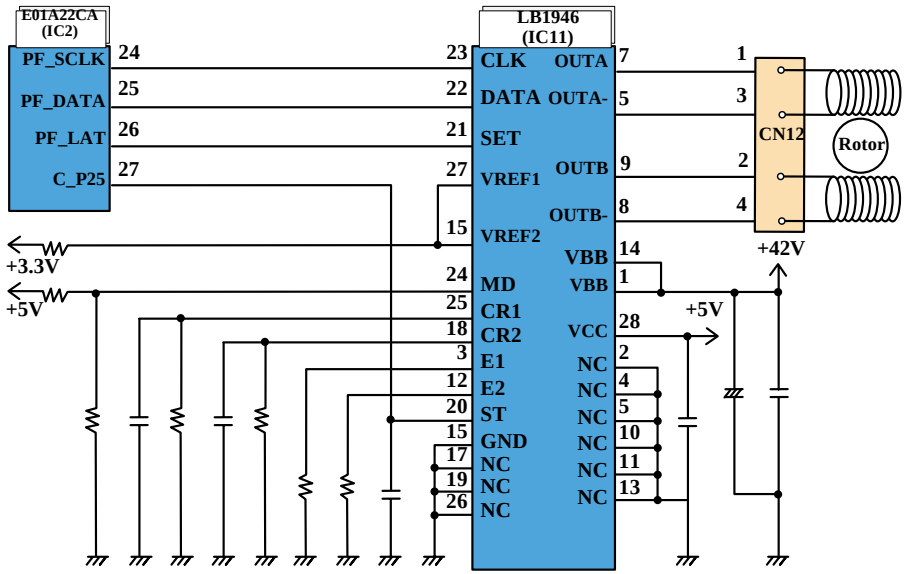



**Figure 2-22. PF Motor Driver Circuit Block Diagram**

### 2.2.2.5 ASF Motor Drive Circuit

The motor driver IC on the MAIN board drives the ASF motor. This product uses 4-phase 200-pole hybrid type stepping motor and performs constant current bi-polar drive.

CPU (IC2) converts ASF motor phase control signal to LB1946 micro step drive form and outputs to motor driver IC (IC10) LB1946 from each port. Based on this signal, IC10 determines the phase mode.

The current value on each phase is determined by CPU (IC2) and outputs from each port to driver IC (IC10). Motor driver IC generates motor driver waveform based on these input signals and controls the motor. If the printer does not receive any data from PC for 5 minutes, CPU set the motor drive current to 0 via each port and the motor drive is turned off to save the power consumption.

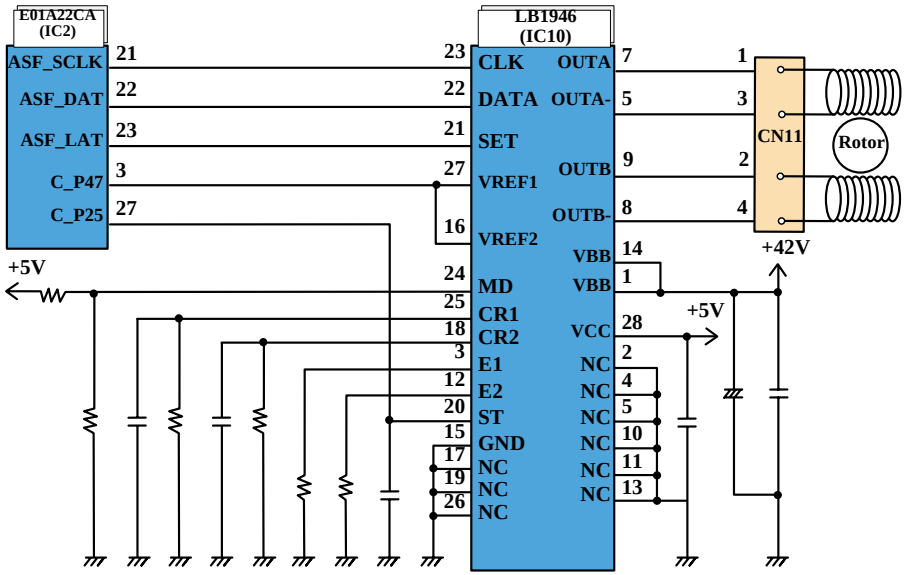



**Figure 2-23. ASF Motor Driver Circuit Block Diagram**

### 2.2.2.6 Reset and EEPROM circuits

Unlike the previous products, this product uses IC in which reset circuit and EEPROM are united.

☐ Reset Circuit

Reset circuit RTC9822 (IC6), which monitors three types of voltage; logic group (+3.3V, +5V) and power group (+42V), is mounted on the C408MAIN board. Each reset circuit monitors the voltage of +3.3V, +5V and +42V and prevents the operation failure of printer by resetting CPU and ASIC if any failure is detected. It is possible for this IC to monitor the +3.3V, +5V and +42V lines by one IC and performs resetting on each voltage. Following circuit diagram shows the structure of reset circuit.

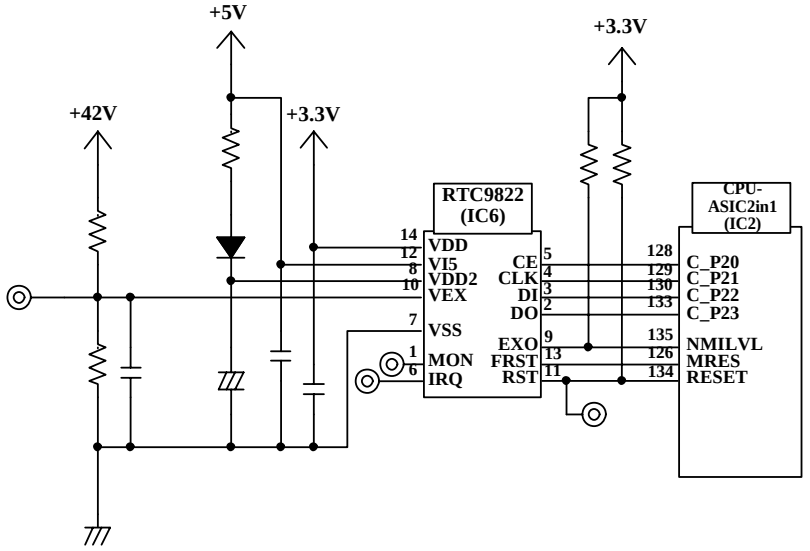



**Figure 2-24. Reset EEPROM Circuit Diagram**

■ +3.3V line reset circuit

The 3.3V line is monitored at the VDD port of IC6. It outputs the reset signal from the FRST port to the CPU ASIC if the irregular voltage (2.5V or less) is detected.

- +5V line reset circuit
  The 5V line is monitored at the VDD port of IC6. It outputs the reset signal from the RST port to the CPU ASIC if the irregular voltage (4.2V or less) is detected.
- +42V line reset circuit
  The 42V line is monitored at the VEX port of IC6. It outputs the reset signal from the EXO port to the CPU, ASIC if the irregular voltage (36.0V or less) is detected.

***NOTE:*** *IC6 also contains the RTC (Real Time Clock) function and performs the timer control function by the BAT1 power supply while the power is turned OFF.*

☐ EEPROM Control Circuit
Since EEPROM is nonvolatile memory, it keeps written information if the printer power is turned off. Various adjustment values, factory shipment data and printer condition values are written and stored in EEPROM. (Figure 2-24. "Reset EEPROM Circuit Diagram")

EEPROM is connected to CPU with 4 lines and each line has the following function.

- CE: Chip selection signal
- CLK: Data synchronism clock pulse
- DI: Data writing line (serial data) at power off.
- DO: Data reading line (serial data) at power on.

### 2.2.2.7 Sensor Circuit

C408 MAIN is equipped with the following three sensors to detect the status of the printer. Unlike the previous product, ASF HP sensor is not equipped on the ASF and the ASF HP is determined with the clutch mechanism (2.1.5 "Paper Loading Mechanism (ASF Unit)").

☐ HP Sensor
This sensor uses the photoelectric conversion method and detects the CR home position at the right end of CR shaft by the HP sensor when the power is turned on. This sensor outputs the HIGH signal to the CPU as it detects the CR home position when the power is turned on. If the LOW signal is outputted at the detection position, the CR unit is not at the home position.

☐ PE sensor
This sensor uses the photoelectric conversion method and detects if there is paper in the ASF unit or not. This sensor outputs the HIGH signal when there is paper in the paper path. This sensor outputs the LOW signal when there is no paper in the paper path. This condition is always monitored with this sensor while the printer power is turned on.

☐ Thermistor (THM)
The thermistor is attached directly on the printhead driver board. It monitors the temperature around the printhead and determines the proper head drive voltage according to the ink viscosity that varies by the temperature. This information is fed back to the CPU analog port. When the temperature rises, the head drive circuit lowers the drive voltage: When the temperature lowers, the head drive circuit rises the drive voltage.

The block diagram for the sensor circuit is shown below

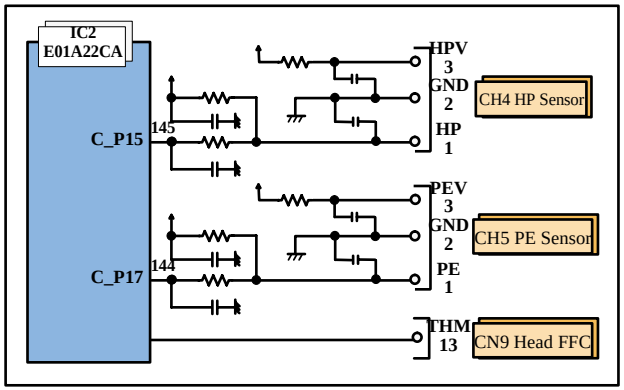



**Figure 2-25. Sensor Circuit Diagram**

CHAPTER

# 3

# TROUBLESHOOTING

Download Free Service Manual and Resetter Printer at http://printer1.blogspot.com

# 3.1 Overview

This chapter describes how to identify troubles in two levels: unit level repair and component level repair. Refer to the flowchart in this chapter to identify the defective unit and perform component level repair if necessary. This chapter also explains motor coil resistance, sensor specification and error indication.

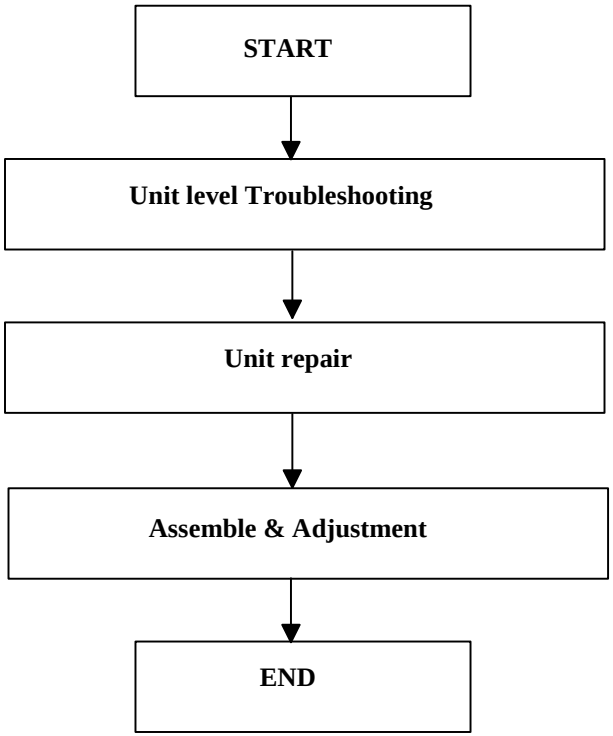



**Figure 3-1. Troubleshooting Flowchart**

**Table 3-1. Motor, Coil Resistance**

| Motor | Location | Check Point | Resistance |
|---|---|---|---|
| CR Motor | CN13 | Pin 1 and 3<br>Pin 2 and 4 | 7.8 Ohms ± 10%<br>(25 °C/ phase) |
| PF Motor | CN12 | Pin 1 and 3<br>Pin 2 and 4 | 7.8 Ohms ±10%<br>(25 °C/ phase) |
| ASF Motor | CN11 | Pin 1 and 3<br>Pin 2 and 4 | 7.8 Ohms ±10%<br>(25 °C/ phase) |

**Table 3-2. Sensor Check Point**

| Sensor Name | Check Point | Signal Level | Switch Mode |
|---|---|---|---|
| HP Sensor | CN4/Pin 1 and 3 | 0.7V less than | OFF<br>• HP Out of range |
| | | 2.4V more than | ON<br>• Within HP range |
| PE Sensor | CN5/Pin 1 and 3 | 0.7V less than | OFF<br>• No paper |
| | | 2.4V more than | ON<br>• Detect paper |
| Thermistor (THM) | On the Head driver board | Analog signal | 10 K (24 °C) |

# 3.2 Troubleshooting with LED Error Indications

This section describes how to troubleshoot the problem when the printer indicates an error at power on and can not print. The Stylus PHOTO 895/785EPX can detect the printer condition and errors, and indicates them with the LED on printer panel and LCD on the monochrome panel. Following table shows the LED and LCD indications.

**Table 3-3. Error LED Indication**

| Printer Status | Error | Priority |
|---|---|---|
| Power ON | - | 10 |
| Ink sequence proceeding | - | 6 |
| Ink cartridge changing | - | 5 |
| Data processing | - | 9 |
| Paper out | On | 4 |
| Paper jam condition | On | 3 |
| Ink end (black) | On -> Blink | 8 |
| Ink low (black) | Blink | 8 |
| Ink end (color) | On -> Blink2 | 8 |
| Ink low (color) | Blink | 8 |
| Ink end (both color, black) | On -> On | 8 |
| No ink cartridge (color or black) | On | 7 |
| Reset, Timer IC reset, EEPROM clear | On (1s) | - |
| Ink overflow counter reset | On (2s) | - |
| Maintenance request<br>(Ink overflow counter) | Blink | 2 |
| Fatal error | On | 1 |
| Special setting | Blink2 | - |

*"-": No change.*
*"A->B": A is a indicator condition when carriage is on Home Position*
*B is a indicator in ink exchange sequence.*

- *Blink: Repeats lighting on for 0.5 sec.+ off for 0.5 sec.*
- *Blink2: Repeats lighting on for 0.2 sec.+ off for 0.2 sec. + on for 0.2 sec.+ off for0.4 sec.*

**Table 3-4. Error LCD Indication**

| Source | Detail of error | Display (First line) | Display (Second line) | Remarks |
|---|---|---|---|---|
| Printer | No ink (black) | Err | IEb | - |
| | No ink (color) | Err | IEc | |
| | No paper | Err | PE | - |
| | Paper jam | Err | PJ | - |
| | No ink cartridge/abnormality | Err | IC | - |
| | Maintenance required | Err | Sr | - |
| Printon | Memory card error | Err | CE | When an error occurred during reading data from a memory card |
| Common | Fatal error | Err | FE | Unrecoverable error |

Following table describes the possible causes when the error is indicated with LED and LCD, or troubles in other conditions.

**Table 3-5. Error Condition and possible cause**

| Symptom | Possible Cause | Check table |
|---|---|---|
| Paper out error indication (Paper is not loaded correctly) | • The friction of the LD roller is lowered due to the paper dust.<br>• The clutch mechanism is broken.<br>• Tension spring 0.143 come off in the clutch mechanism.<br>• Compression spring 4.8 comes off.<br>• Tip of Change lever has any damage.<br>• ASF motor is broken. | Table 3-6 "Paper out error indication" |
| Paper jam error indication | • Star wheel assembly is not assembled on the Paper eject frame.<br>• The Spur gear 25.6 is not assembled correctly.<br>• The paper guide front is not assembled correctly or has any damage.<br>• The PE detection lever dose not move smoothly. | Table 3-7 "Paper jam error indication" |
| No ink cartridge error / No ink error | • Ink cartridge installation faulty.<br>• Head FFC connection faulty.<br>• Ink cartridge CSIC faulty. | Table 3-8 "No Ink Cartridge or Ink Out error indication" |
| Multiple papers are always loaded | • The paper return plate dose not work correctly. | Table 3-9 "Multiple papers are always loaded" |
| Paper is always loaded without any print job | • The Change lever is broken in the Clutch mechanism. | Table 3-10 "Paper is always loaded without any print job" |

**Table 3-5. Error Condition and possible cause**

| Symptom | Possible Cause | Check table |
|---|---|---|
| Maintenance request error | • Count up of the protection counter | Table 1-6 "Special Setting Mode" |
| Fatal error indication | • HP sensor lever or PE sensor lever dose not move smoothly.<br>• HP/PE sensor is defective.<br>• CR motor is defective.<br>• ASF motor is defective.<br>• Main board is defective.<br>• Printer Housing dose not secured with screw on -the printer mechanism. | Table 3-11 "Fatal Error indication" |
| Any error indication is not displayed. But the paper is not loaded completely. | • PF motor is defective.<br>• PF motor is disengaged from the PF roller gear. | Table 3-12 "Paper is not loaded completely without any error indication" |
| Any error indication is not displayed. But, the paper is not ejected completely. Paper jam dose not occur. | • Paper eject roller gear is disengaged from the pump's gears.<br>• The Paper eject frame is not assembled in the Paper eject frame. | Table 3-13 "Paper is not ejected completely without any error indication" |
| Dot missing occur and it is not recovered with CL | • Pump unit dose not absorb the ink from the printhead.<br>• Cap unit dose not stick on the surface of the printhead completely.<br>• The printhead is broken.<br>• The head FFC has any damage.<br>• The main board is defective. | Table 3-14 "Dot missing occur and it is not recovered with CL" |

### Table 3-5. Error Condition and possible cause

| Symptom | Possible Cause | Check table |
|---|---|---|
| Print quality is not good<br>• Vertical banding<br>• Horizontal banding<br>• Printing is blurred<br>• Ink stains the paper | • The accuracy of the CR motor is lowered.<br>• The lack of the lubricant around the CR unit.<br>• The both I/C is not held in the CR unit securely.<br>• The Paper eject frame is deformed.<br>• Any foreign material is sticking around the printhead.<br>• Paper feed accuracy is lowered.<br>• Printer driver setting is not suitable.<br>• Paper path has ink stain somewhere. | Table 3-15 "Print quality is not good" |

If the problem fits to the detail phenomenon in the table, make sure the check point and repair the product following the corresponding remedy mentioned in the table when you find the defective parts in the check point.

### Table 3-6. Paper out error indication

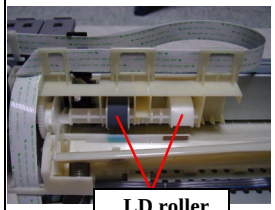
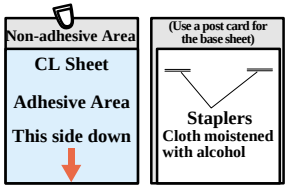
| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 1 | ASF LD roller attempt to load the paper. But, paper is not loaded at all. The LD roller seems slipping. | • Check the surface of the LD roller if the micro pearl or severe smear is adhered.<br>  <br>LD roller<br>If it is no problem, proceed the next step. | • Set a cleaning sheet in the ASF up side down. Then holding the top edge, try to load the paper from the Printer driver. The micro pearl on the LD roller surface is removed. To remove severe smear, staple a cloth moistened with alcohol to a post card and clean the roller in the same manner.<br>  <br>Non-adhesive Area<br>CL Sheet<br>Adhesive Area<br>This side down<br>(Use a post card for the base sheet)<br>Staplers<br>Cloth moistened with alcohol<br>• If the problem is not solved, replace the LD roller with new one. |

**Table 3-6. Paper out error indication**

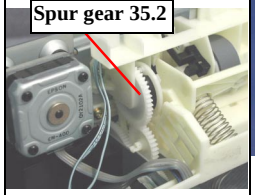
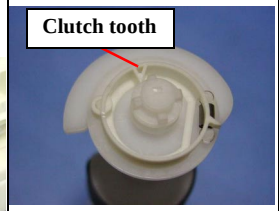
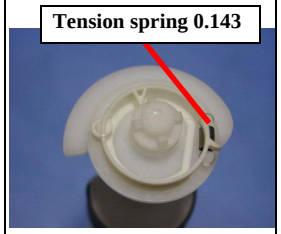
| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 2 | ASF LD roller does not rotate. But, the ASF motor and Spur gear 35.2 is rotating.<br>  <br> | • Check if the clutch tooth is broken.<br>  <br><br>If it is no problem, proceed the next step. | • Replace the clutch mechanism with new one. |
| 3 | ASF LD roller does not rotate. But, the ASF motor and Spur gear 35.2 is rotating. | 1. Check if the tension spring 0.143 comes off in the Clutch mechanism.<br>  <br><br>If it is no problem, proceed the next step. | 1. Se the tension spring 0.143 in the clutch mechanism.<br>2. Set the Compression spring 1.47 in the Change lever. |

**Table 3-6. Paper out error indication**

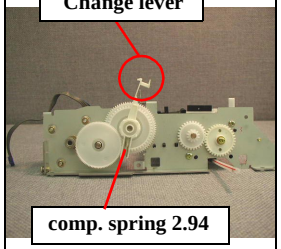
| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 4 | When the print data is sent to the printer, ASF LD roller continue to load the paper even if the first paper is loaded to the PF roller and the paper is ejected while the ASF hopper is flapping. | 1. Check if the tip of the Change lever has any damage.<br>  <br><br>2. Check if the Compression spring 2.94 comes off from the Change lever.<br>If it is no problem, proceed the next step. | 1. Replace the Change lever with new one.<br>2. Set the Compression spring 2.94 in the Change lever. |
| 5 | Paper is loaded. But, paper is loaded again, and paper out error is indicated. | 1. Check if the PE sensor work correctly by using the tester.<br>Refer to Table 3-2 "Sensor Check Point" | 1. Replace the PE sensor with new one.<br>2. If the problem is not solved, replace the Main board with new one. |

**Table 3-7. Paper jam error indication**

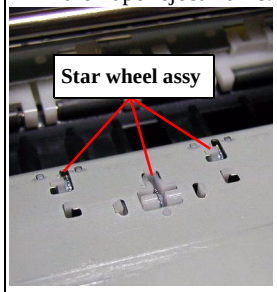
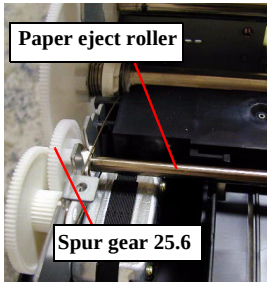
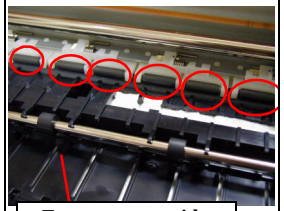
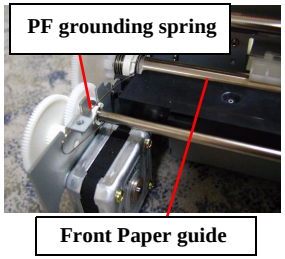
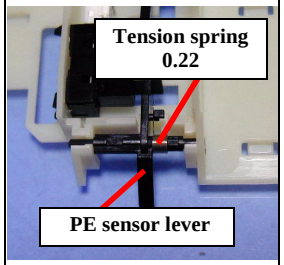
| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 1 | Paper is not ejected completely and jammed around the Paper eject frame. | • Check if the star wheel assembly is assembled in the Paper eject frame.<br>  <br><br>If it is no problem, proceed the next step. | • Remove the jammed paper and assemble the Star wheel assembly in the Paper eject frame completely.<br>If the hook portion of the Star wheel assembly is broken, replace the Star wheel assembly with new one. |
| 2 | Ditto | • Check if the Paper eject roller is rotating correctly.<br>  <br><br>If it is no problem, proceed the next step. | • Set the tip of the Spur gear 25.6 to the Combination gear 11.6, 36.8 and assemble it correctly. |

**Table 3-7. Paper jam error indication**

| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 3 | The paper is jammed around the Front paper guide. | 1. Check if the Front paper guide is floating from the assemble position.<br>2. Check if there is any damage around the rear edge of the each rib on the Front paper guide<br>  <br><br>If it is no problem, proceed the next step. | 1. Assemble the Front paper guide front to the suitable portion and confirm the PF grounding spring is securing the Front paper guide.<br>  <br><br>2. Replace the Front paper guide with new one. |
| 4 | Paper is loaded correctly from ASF.<br>But, after complete the print job, paper jam indicated on the screen without any paper jam.<br>If you send the new print job in this condition, the General error is indicated on the screen. | • Check if the Torsion spring 0.22 comes off on the both PE sensor lever.<br>  <br><br>If it is no problem, proceed the next step. | • If the Torsion spring 0.22 is not set on the correct position, set it correctly. If any paper dust is placed around the PE sensor lever, remove it. |

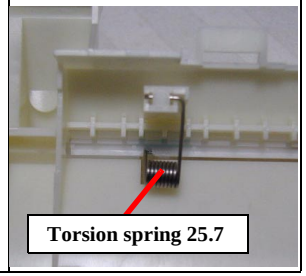
### Table 3-7. Paper jam error indication

| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 5 | When the paper is loaded from the ASF and ejected without any printing. After eject the paper, paper eject sequence is continued. | 1. Check if the CN4 connector cable for PE sensor cable is disconnected on the Main board or sensor.<br>2. Check if the PE sensor operates correctly by using the tester. Refer to Table 3-2 "Sensor Check Point". | 1. Connect the CN4 connector cable to the CN4 on the Main board.<br>2. Replace the PE sensor with new one.<br>3. If the problem is not solved, replace the Main board with new one. |

### Table 3-8. No Ink Cartridge or Ink Out error indication

| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 1 | A [No Ink Cartridge] or [Ink Out Error] message is displayed when the power to the printer is switched on. | 1. Check to ascertain that an ink cartridge has been set in place.<br>2. Check the remaining ink with the printer driver or STM3.<br>3. Check to ascertain that the head FFC is been attached correctly to the head.<br>4. Check if the head FFC has any damaged.<br>5. Check if the I/C works correctly. | 1. Set the ink cartridge in place.<br>2. Remove and then reset the ink cartridge in place.<br>3. Connect the Head FFC.<br>4. Replace the Head FFC.<br>5. Replace the ink cartridge (faulty CSIC.)<br>6. If the problem is not solved, replace the Main board with new one. |

### Table 3-9. Multiple papers are always loaded

| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 1 | Any error indication is not displayed on the monitor. But, multiple papers are always loaded from ASF. | Check if the Paper return plate is operating correctly in the ASF when the paper is loaded. | • Assemble the torsion spring 25.7 in the ASF frame.<br>  |

### Table 3-10. Paper is always loaded without any print job

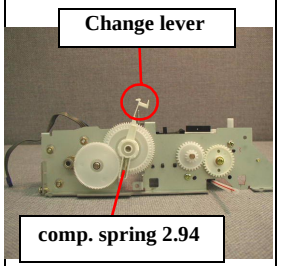
| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 1 | Paper is always loaded from ASF without any print job.<br>ASF hopper continue to flapping when the printer is turned on. | 1. Check if the tip of the Change lever has any damage.<br>2. Check if the Compression spring 2.94 comes off from the Change lever.<br>  | 1. Replace the Change lever with new one.<br>2. Set the Compression spring 2.94 in the Change lever. |

**Table 3-11. Fatal Error indication**

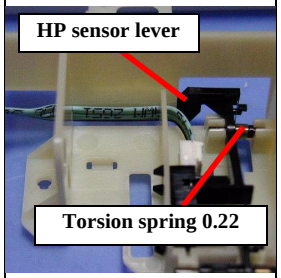
| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 1 | When the printer is turned on, Fatal Error is indicated after the Carriage is moved. | 1. Check if the Torsion spring 0.22 comes off on the both HP sensor lever.<br>  <br> | 1. Set the Torsion spring 0.22 on the HP sensor lever. |
| | | 2. Check if the HP sensor connector cable is connected on the CN4 on the Main board or sensor. | 2. Connect the HP sensor connector cable to the CN4 on the Main board. |
| | | 3. Check if the HP sensor work correctly by using the tester. Refer to Table 3-2 "Sensor Check Point" | 3. Replace the HP sensor with new one. |
| | | | 4. If the problem is not solved, replace the Main board with new one. |

**Table 3-11. Fatal Error indication**

| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 2 | When the printer is turned on, the CR unit dose not move at all in the power on sequence. | 1. Check if the CR motor connector is connected CN13 on the Main board.<br>2. Check if the coil resistance of the CR motor is about 7.8ohm by using the tester. Refer to Table 3-1 "Motor, Coil Resistance". | 1. Connect the CR motor connector to the CN13 on the Main board.<br>2. Replace the CR motor with new one.<br>3. If the problem is not solved, replace the Main board with new one. |
| 3 | When the printer is turned on, ASF motor dose not rotate at all in the power on sequence. | 1. Check if the ASF motor connector is connected to the CN11.<br>2. Check if the ASF motor coil resistance is about 7.8 ohm by using tester. | 1. Connect the ASF motor connector to the CN11 on the Main board.<br>2. Replace the ASF motor with new one.<br>3. If the problem is not solved, replace the Main board with new one. |

**Table 3-11. Fatal Error indication**

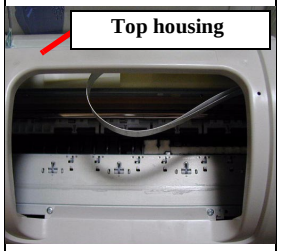
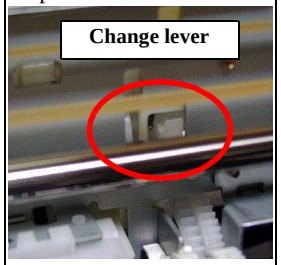
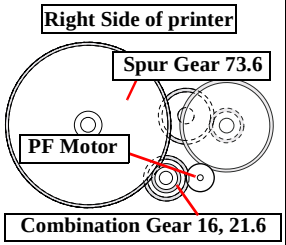
| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 4 | When the printer is turned on, it sounds strange noise and the CR unit is stopped around the CR lock lever. | 1. Check if the Top housing is secured with the fixing screw at the front side.<br>  <br> | 1. Secure the Housing fixing screw at the printer front side. |
| | | 2. Check if the Change lever is placed to the printer front side.<br>  <br> | 2. Turn back the Change lever to the printer back side with the tweezer or small screw driver. |
| | | 3. Check if the ASF motor is operated. Check the CN11 connector and the coil resistance for ASF motor. | 3. Connect the ASF motor cable to CN11 on the Main board.<br>Replace the ASF motor with new one. |

**Table 3-11. Fatal Error indication**

| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 4 | Ditto | 4. If the CR lock lever is not released even if the ASF motor rotate in the power on sequence, check if one of the gears has any damage in the ASF motor torque transportation path.<br>Refer to Figure 2-15. "ASF Motor Drive Transmission Path to the Pump Unit" to the Pump unit. | 4. Change the damaged gear with new one.<br>5. If the problem is not solved, replace the Main board with new one. |

### Table 3-12. Paper is not loaded completely without any error indication

| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 1 | In the ASF sequence, the paper is loaded. But, PF roller does not rotate and paper is not loaded completely. | 1. Check if the PF motor connector is connected to the CN12.<br>2. Check if the PF motor coil resistance is about 7.8 ohm by using tester.<br>3. PF motor drive in not transmitted to the PF roller. | 1. Connect the PF motor connector to the CN12.<br>2. Replace the PF motor.<br>3. Check if the PF motor, Spur Gear 73.6 and Combination Gear 16, 21.6 are meshed correctly.<br>  <br>4. If the problem is not solved, replace the Main board with new one. |

### Table 3-13. Paper is not ejected completely without any error indication

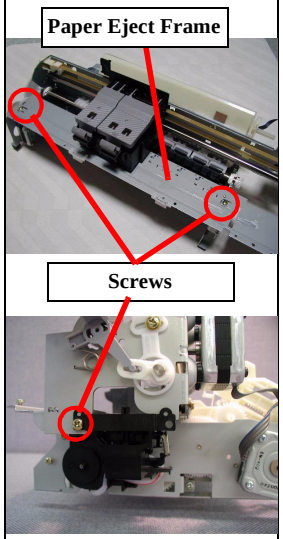
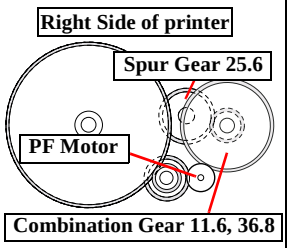
| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 1 | Printing is normal. But, the paper is not ejected completely and the bottom area stay around the Paper eject frame. | 1. Check if the Paper eject roller rotate when the paper is ejected.<br>2. Check if the Paper eject frame is secured with the three fixing screws to the Main frame.<br>  | 1. Assemble the Spur gear 25.6 to the Combination gear 11.6, 36.8.<br>  <br>2. Secure the Paper eject frame with the three fixing screws to the Main frame. |

**Table 3-14. Dot missing occur and it is not recovered with CL**

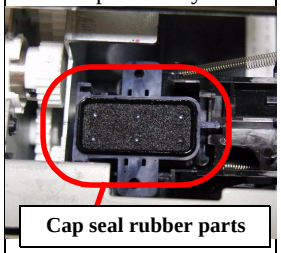
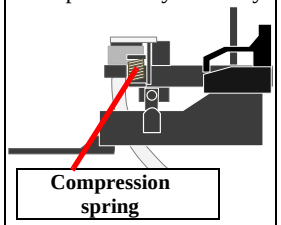
| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 1 | In the CL sequence, the pump unit seems work correctly. But, ink is not ejected to the waste ink pad at all.<br>Moreover, any ink is not absorbed from the head to the cap. | 1. Check if ink is ejected to the waste ink pad via pump unit in the CL sequence.<br>2. Check if there is any foreign material around the seal rubber parts on the cap assembly.<br>  <br><br>3. Check if any damage is observed around the seal rubber parts on the cap assembly.<br>4. Check if the two compression spring are assembled in the Cap assembly correctly.<br>  <br> | 1. If ink is not ejected at all to the waste ink pad in the CL sequence, proceed the following check point 2).<br>2. Remove the foreign material around the seal rubber parts.<br>3. Replace the Cap assembly with new one.<br>4. Set the Compression spring into the Cap assembly. |

**Table 3-14. Dot missing occur and it is not recovered with CL**

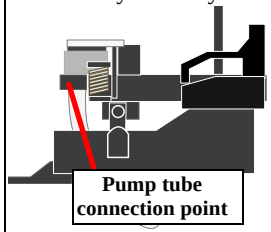
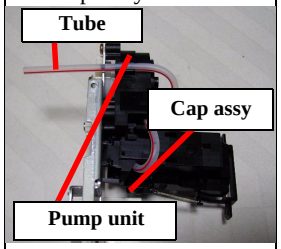
| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 1 | Ditto | 5. Check if the Pump tube is connected to the bottom of the Cap assembly correctly<br>  <br><br>6. Check if the pump tube has a little slack between the Cap assembly and the pump unit when the Cap assembly is slide up completely.<br>  <br> | 5. Connect the Pump tube to the bottom of the Cap assembly deeply.<br>6. Pump unit may coil the pump tube inside the unit. In this case, pull out the coiled tube from the pump unit carefully. After that, connect the pump tube to the Cap assembly after placing the tube correctly.<br>7. If the problem is not solved, replace the Pump unit with new one. |

**Table 3-14. Dot missing occur and it is not recovered with CL**

| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 2 | In the CL sequence, ink is ejected to the Waste ink pad (this means pump unit & cap unit are working correctly). But, the dot missing is not solved at the specific nozzles even if the several CLs are performed. | 1. Check if the segment in the nozzle check patter is reduced every CL & Nozzle check pattern printing.<br>2. Check if any damage is observed on the Head FFC. | 1. Replace the I/C with new one in the I/C replacement sequence.<br>2. Replace the Head FFC with the new one.<br>3. Replace the printhead with new one. |
| 3 | In the CL sequence, ink is ejected to the Waste ink pad. But, dot missing is occurred on all nozzle in the printing and is not solved in the several CLs. | 1. Check if the Head FFC is connected to the CN8 and CN9 on the Main board or Head FFC. | 1. Connect the Head FFC securely to the CN8 and CN9 on the Main board or Printhead.<br>2. Replace the Printhead with new one.<br>3. Replace the Main board with new one. |

**Table 3-15. Print quality is not good**

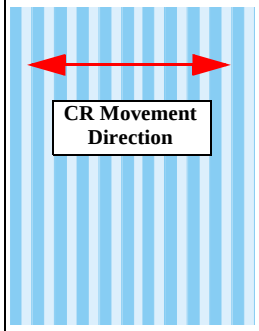
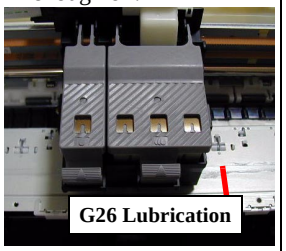
| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 1 | Uneven vertical banding is appeared against the CR movement direction.<br>  <br> | 1. Check if each segment is printed correctly in the nozzle check pattern.<br>2. Check if the surface of the CR guide shaft dose not have any sever stain.<br>3. Check if the surface of the CR sliding portion on the Paper eject frame has enough oil.<br>  <br><br>4. Check if the CR guide shaft is assembled in the correct portion securely.<br>5. Check if the surface of the CR guide shaft is flat.<br>6. Check if the surface of the Paper eject frame is flat. | 1. Perform the CL and check the nozzle check pattern.<br>2. Clean the surface of the CR guide shaft with the dry soft cloth and lubricate G-56 inside the CR guide shaft.<br>3. Clean the surface of the CR sliding portion on the Paper eject frame and lubricate specific amount of the G-26.<br>4. Reassemble the CR guide shaft into the mounting slat on the both side frame and secure it with Rod spring.<br>5. Replace the CR guide shaft with new one.<br>6. Replace the Paper eject frame with new one.<br>7. Replace the following parts.<br>• CR motor<br>• CR timing belt<br>• Compression spring 19.6 |

**Table 3-15. Print quality is not good**

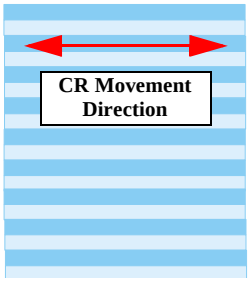
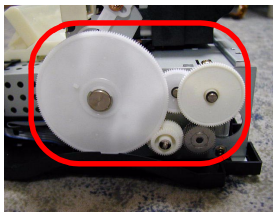
| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 2 | Micro banding appears horizontally against the paper feeding direction and it appears with the same width.<br>  <br> | 1. Check if each segment is printed correctly in the nozzle check pattern.<br>2. Check if the suitable paper is used according to the printer driver setting.<br>3. Check if the Paper feed roller is dirty.<br>4. Check if the following parts do not have any damage.<br>• Combination gear 16, 21.6<br>• Combination gear 11.6, 36.8<br>• Spur gear 73.6<br>• Spur gear 25.6<br>  | 1. Perform the CL and check the nozzle check pattern. by using the Adjustment program.<br>2. Use the suitable paper according to the printer driver setting.<br>3. Clean the surface of the PF roller carefully with the soft brush<br>4. Replace the damaged parts with new one.<br>5. Replace the Printhead with new one. |
| 3 | Printing is blurred | 1. Check if the suitable paper is used according to the printer driver setting.<br>2. Check if the correct head ID is stored in the EEPROM by using the Adjustment program. | 1. Use the suitable paper according to the driver setting.<br>2. Input 13 digits code of the head ID into the EEPROM by using the Adjustment program. |

**Table 3-15. Print quality is not good**

| Step No. | Detail phenomenon | Check point | Remedy |
|---|---|---|---|
| 4 | Ink stains the paper | 1. Check if the following parts are stained with ink.<br>• Upper paper driven roller<br>• PF roller<br>• Paper guide front<br>• Paper eject roller<br>2. Check if there is some ink drops around the backside of the printhead.<br>3. If there is ink smudging the bottom of the printed paper, check if the paper eject frame is not bent up.<br>4. If the bottom area of the printed paper has ink stain, check if the Paper eject frame is bent upward. | 1. Clean the ink stained parts with soft cloth.<br>2. Wipe off the ink drop with the soft cloth carefully.<br>3. Secure the screws fixing the Paper eject frame.<br>4. Replace the Paper eject frame with new one. |

CHAPTER

# 4

# DISASSEMBLY AND ASSEMBLY

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# 4.1 Overview

This section describes procedures for disassembling the main components of the product. Unless otherwise specified, disassembly units or components can be reassembled by reversing the disassembly procedure. Things, if not strictly observed, that could result in injury or loss of life are described under the heading “Warning”. Precautions for any disassembly or assembly procedures are described under the heading “CAUTION”. Chips for disassembling procedures are described under the heading “CHECK POINT”.
If the assembling procedure is different from the reversed procedure of the disassembling, the procedure is described under the heading “REASSEMBLY”.
Any adjustments required after disassembling the units are described under the heading “ADJUSTMENT REQUIRED”. When you have to remove any units or parts that are not described in this chapter, refer to the exploded diagrams in the appendix.

Read precautions described in the next section before starting.

## 4.1.1 Precautions

See the precautions given under the handling “WARNING” and “CAUTION” in the following column when disassembling or assembling the product.

- **Disconnect the power cable before disassembling or assembling the printer.**
- **If you need to work on the printer with power applied, strictly follow the instructions in this manual.**
- **Wear protective goggles to protect your eyes from ink. If ink gets in your eye, flush the eye with fresh water and see a doctor immediately.**
- **Always wear gloves for disassembly and reassembly to avoid iujury from sharp metal edges.**
- **To protect sensitive microprocessors and circuitry, use static discharge equipment, such as anti-static wrist straps, when accessing internal components.**
- **Never touch the ink or wasted ink with bare hands. If ink comes into contact with your skin, wash it off with soap and water immediately. If irritation occurs, contact a physician.**
- **When a lithium battery is installed on the main board of this printer, make sure to observe the following instructions when serving the battery:**
  1. Keep the battery away from any metal or other batteries so that electrodes of the opposite polarity do not come in contact with each other.
  2. Do not heat the battery or put it near fire.
  3. Do not solder on any part of the battery. (Doing so may result in leakage of electrolyte from the battery, burning or explosion. The leakage may affect other devices close to the battery.)
  4. Do not charge the battery. (An explosion may be generated inside the battery, and cause burning or explosion.)
  5. Do not dismantle the battery. (The gas inside the battery may hurt your throat. Leakage, burning or explosion may also be resulted.)
  6. Do not install the battery in the wrong direction. (This may cause burning or explosion.)
- **Danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacture. Dispose the used batteries according to government’s law and regulations.**

- **Avant de commencer, assurez vous que l'imprimante soit eteinte et que le cordon d'alimentation soit debranche.**
- **Lorsque vous changez la pile au lithium, assurez vous que la nouvelle respecte bien les caracteristiques requises.**
- **Lorque que vous installez la pile au lithium, faites attention a l'inserer dans le bon sens en respectant la polarite.**
- **Veillez a jeter les piles usagees selon le reglement local.**
- **Ne rechargez pas les piles au lithium.**

**Risque d'explosion si la pile est remplacée incorrectment. Ne remplacer que par une pile du même type ou d'un type équivalent recommandé par le fabricant. Eliminer les piles déchargées selon les lois et les règles de sécurité en vigueur.**

- **When working on the FUSER ASSY or nearby parts, be sure to wait until the temperature of the parts cool down to a safe level. Wait at least 40 minutes before you start working on the printer.**

- **Never remove the ink cartridge from the carriage unless this manual specifies to do so.**
- **When transporting the printer after installing the ink cartridge, be sure to pack the printer for transportation without removing the ink cartridge.**
- **Use only recommended tools for disassembling, assembling or adjusting the printer.**
- **Observe the specified torque when tightening screws.**
- **Apply lubricants and adhesives as specified. (See Chapter 6 for details.)**
- **Make the specified adjustments when you disassemble the printer.**
  **(See Chapter 5 for details.)**
- **When assembling, if an ink cartridge is removed and needs to be installed again, be sure to install a new ink cartridge because of the following reasons;**
  1.Once the ink cartridge mounted on the printer is removed, air comes in and creates bubbles in the cartridge. These bubbles clog ink path and cause printing malfunction.
  2.If an ink cartridge in use is removed and is reinstalled, ink quantity will not be detected correctly since the counter to check ink consumption is cleared.
- **Because of the reasons above, make sure to return the printer to the user with a new ink cartridge installed.**
- **Make sure the tip of the waste ink tube is located at correct position when reassembling the waste ink tube. Otherwise it will cause ink leakage.**

## 4.1.2 Tools

Use only specified tools to avoid damaging the printer.

**Table 4-1. Tools**

| Name | Supplier | Parts No. |
|---|---|---|
| Phillips Screw Driver (No.1) | EPSON | B743800100 |
| Phillips Screw Driver (No.2) | EPSON | B743800200 |
| Nipper | EPSON | B740500100 |
| Tweezers | EPSON | B741000100 |
| ROM puller | EPSON | 2035659 (#F749) |
| One side open-end wrench | EPSON | B741300100 |

## 4.1.3 Work Completion Check

If any service is made to the printer, use the checklist shown below to confirm all works are completed properly and the printer is ready to be returned to the user.

**Table 4-2. Completion Check**

| Classification | Item | Check Point | Status |
|---|---|---|---|
| Main Unit | Self-test | Is the operation normal? | ☐ Checked ☐ Not necessary |
| | On-line Test | Is the printing successful? | ☐ Checked ☐ Not necessary |
| | Printhead | Is ink discharged normally from all the nozzles? | ☐ Checked ☐ Not necessary |
| | Carriage Mechanism | Does it move smoothly? | ☐ Checked ☐ Not necessary |
| | | Is there any abnormal noise during its operation? | ☐ Checked ☐ Not necessary |
| | | Is there any dirt or foreign objects on the CR Guide Shaft? | ☐ Checked ☐ Not necessary |
| | | Is the CR Motor at the correct temperature? (Not too heated?) | ☐ Checked ☐ Not necessary |
| | Paper Feeding Mechanism | • Is paper advanced smoothly?<br>• No paper jamming?<br>• No paper skew?<br>• No multiple feeding?<br>• No abnormal noise? | ☐ Checked ☐ Not necessary |
| | | Is the PF Motor at correct temperature? | ☐ Checked ☐ Not necessary |
| | | Is the ASF motor at correct temperature? | ☐ Checked ☐ Not necessary |
| | | Is the paper path free of any obstructions? | ☐ Checked ☐ Not necessary |

**Table 4-2. Completion Check (continued)**

| Classification | Item | Check Point | Status |
|---|---|---|---|
| Adjustment | Specified Adjustment | Are all the adjustment done correctly? | ☐ Checked ☐ Not necessary |
| Lubrication | Specified Lubrication | Are all the lubrication made at the specified points? | ☐ Checked ☐ Not necessary |
| | | Is the amount of lubrication correct? | ☐ Checked ☐ Not necessary |
| Function | Printer Firmware version | Version: | ☐ Checked ☐ Not necessary |
| | Printon Firmware version | Version: | ☐ Checked ☐ Not necessary |
| Packing | Ink Cartridge | Are the ink cartridges installed correctly? | ☐ Checked ☐ Not necessary |
| | Protective Materials | Have all relevant protective materials been attached to the printer? | ☐ Checked ☐ Not necessary |
| Others | Attachments, Accessories | Have all the relevant items been included in the package? | ☐ Checked ☐ Not necessary |

## 4.2 Disassembly

The flowchart below shows step-by-step disassembly procedures. When disassembling each unit, refer to the page number shown in the figure.

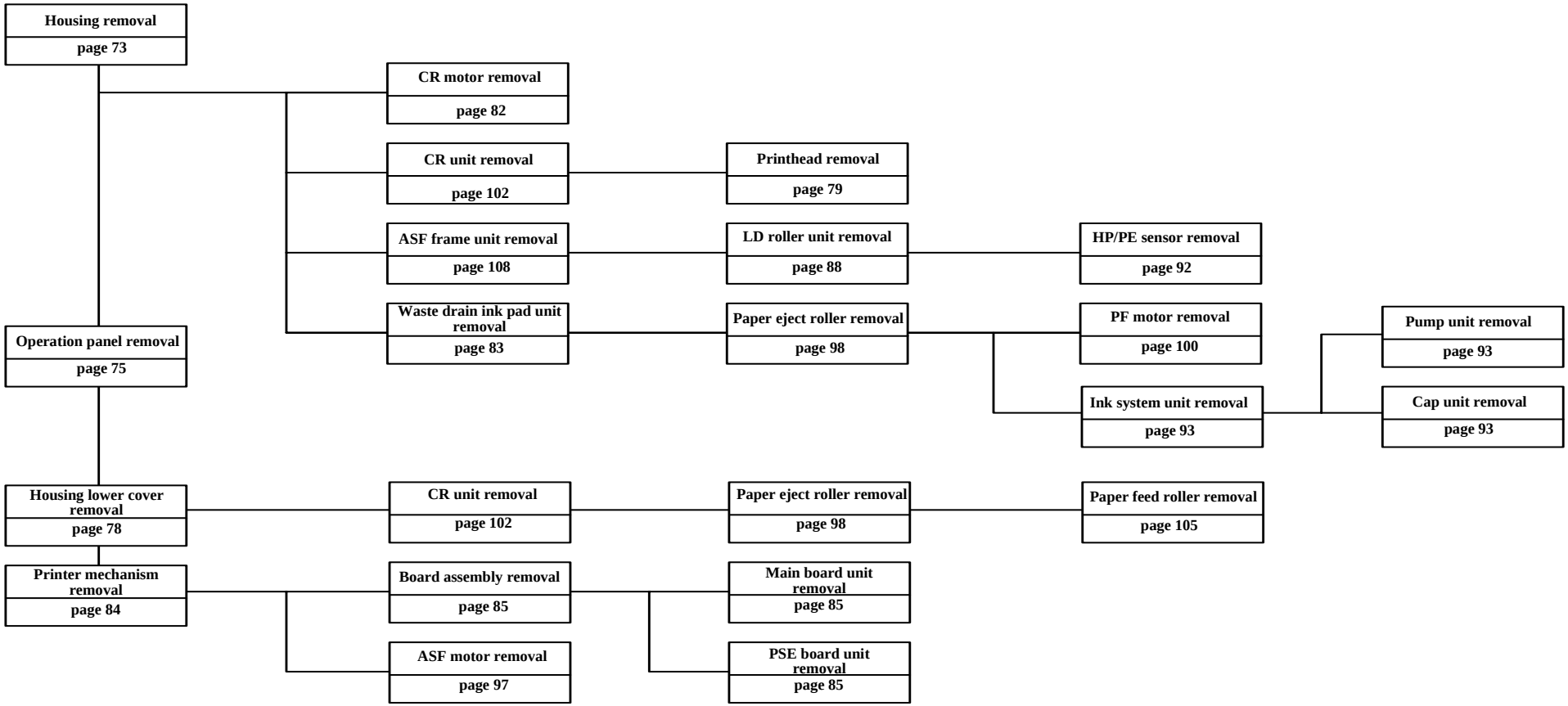



**Figure 4-1. Disassembling Flowchart**

## 4.2.1 Housing Removal

1. Remove the two (C.B.S-TITE 3x6, F/ZN) screws fixing the left and right panel covers to the housing from the holes in the bottom of the printer (the screws are situated near to the rear.)

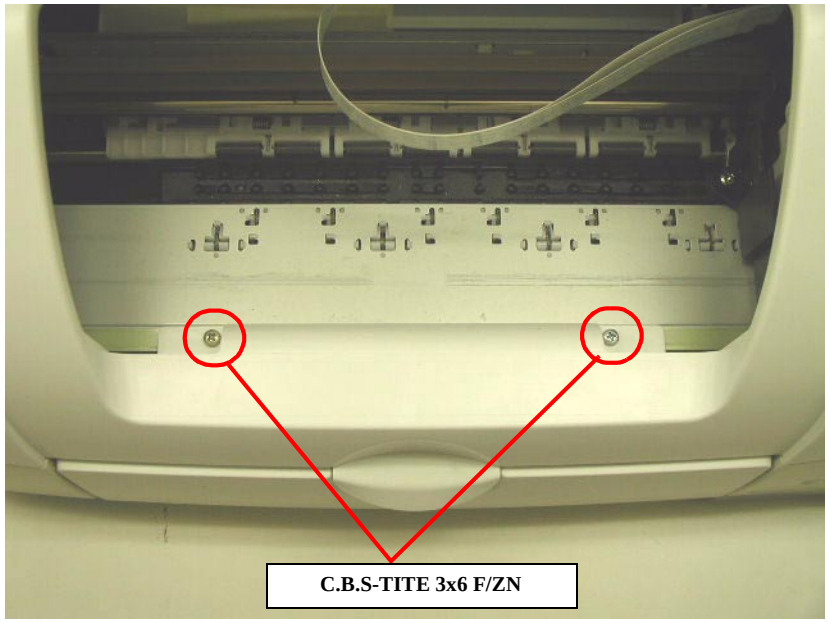



**Figure 4-2. Removing two screws for housing**

2. Remove three screws (C.B.S. 3x6, F/ZN) from the rear of the printer.

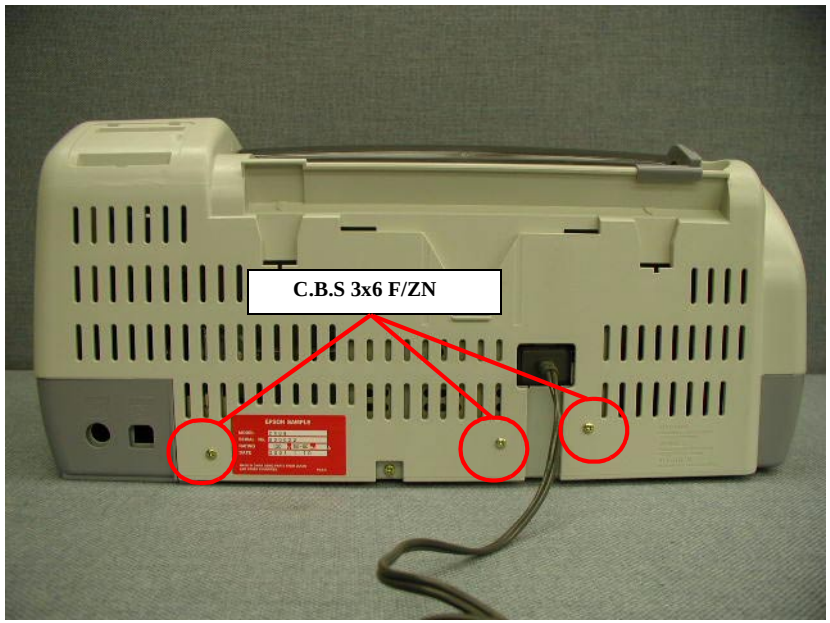



**Figure 4-3. Removing three screws for housing**

3. Release hooks inside the left and right panels. The housing can be detached by pushing it forward to the operator.

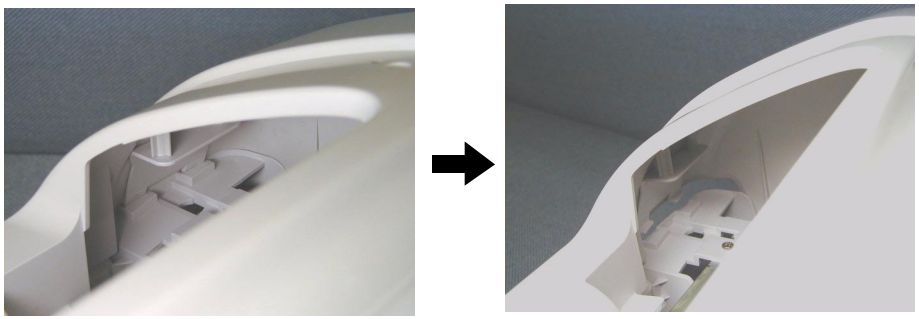


**Figure 4-4. Removing the left side housing**

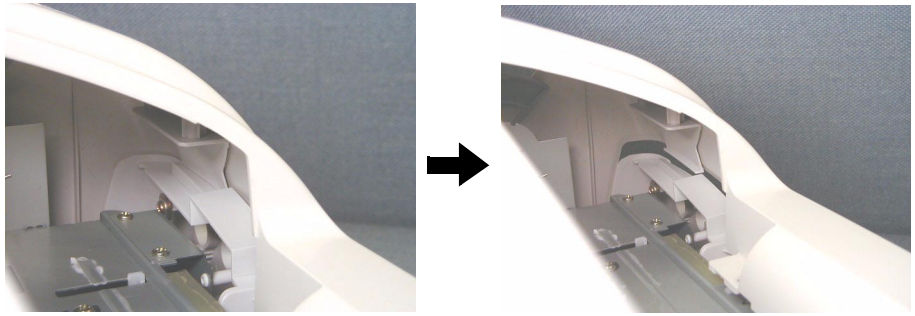


**Figure 4-5. Removing the right side housing**

CAUTION

- **Tightening Torque for screw**
  - C.B.S-TITE 3x6 F/ZN screw for housing front side: 6 +/- 1kgf.cm
  - C.B.S 3x6 F/ZN screw for housing back side : 6+/- 1kgf.cm
- **Ensure that C.B.S-TITE 3 x 6 F/ZN screws are used for the two screws on the front side of the printer. The tips of these screws are rounded for user's safety.**
- **To detach the housing, pay attention since the monochrome panel FFC is installed.**

4. Remove the FFC of housing monochrome panel board.

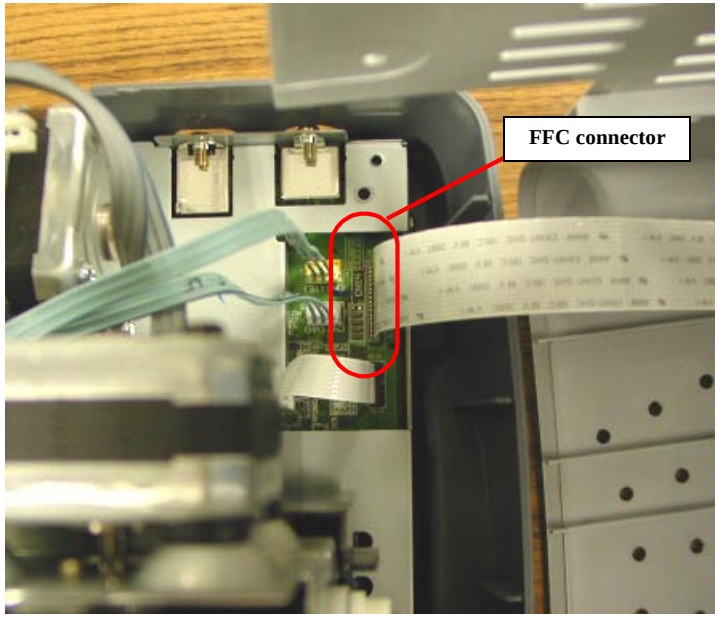


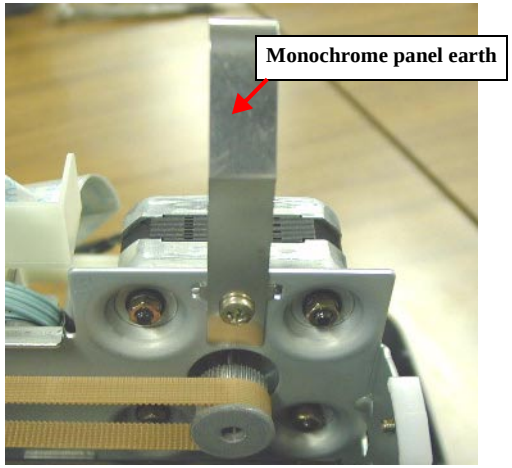

**Figure 4-6. Housing FFC removal**

REASSEMBLY

■ **Tightening Torque for Screw**

• C.B.S 3x6 F/ZN screw for ground screw on the housing: 3.5 +/- 1 kgf.cm

■ **To install the housing, make sure to install the FFC and the Earth of monochrome panel.**




## 4.2.2 Operation Panel removal

The panel board equipped with printer is as follows:

☐ Printer panel board: C408PNL-B

☐ Monochrome panel board: C408PNL

### 4.2.2.1 Printer Panel Board Removal

1. Remove the Housing from the printer. (Refer to Section 4.2.1 "Housing Removal")
2. Remove 3 screws (C.B.S 3x6 F/ZN and C.B.P 3x8 F/ZN) securing the Operation Panel Assembly. Then, remove the Operation Panel Assembly from the Printer Mechanism.

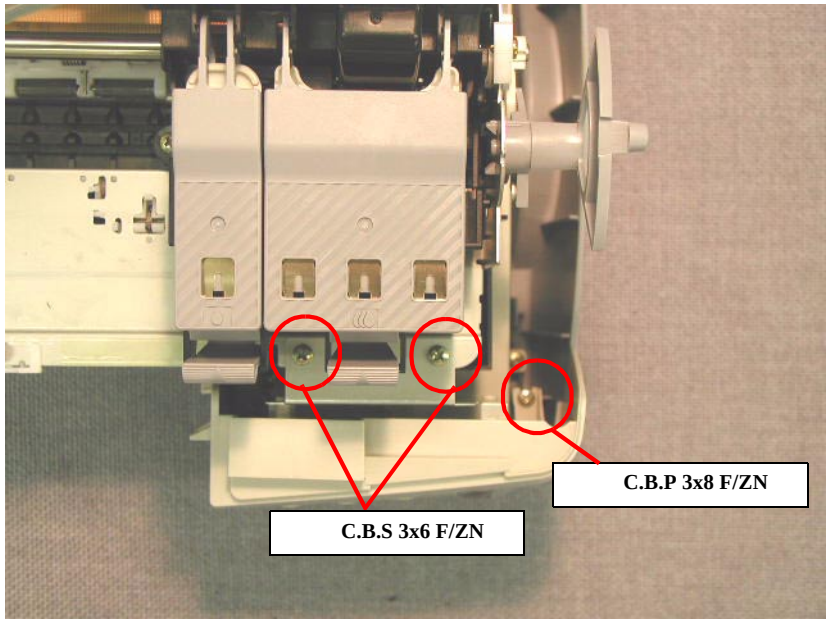



**Figure 4-7. Removing 3 screws for Operation Panel**

REASSEMBLY

■ **Tightening torque for screw**

- C.B.S 3x6 F/ZN screw for control panel cover: 9 +/- 1 kgf.cm
  C.B.P 3x8 F/ZN screw for control panel cover: 6 +/- 1 kgf.cm

3. Disconnect the Panel FFC from the connector on the C408PNL-B board
4. Remove two screws (C.B.P. 3x8, F/ZN) and detach the Sub Right Panel Housing from the printer panel board (C408PNL-B).

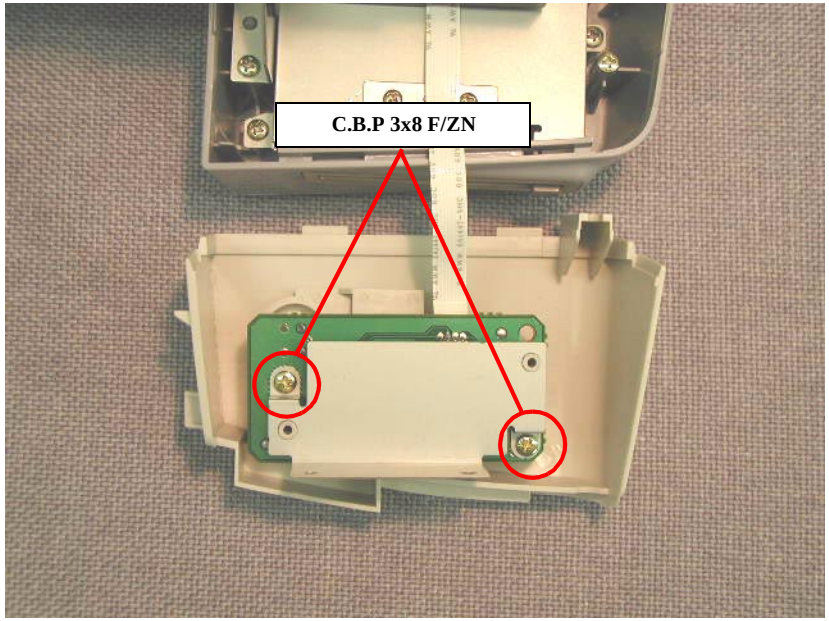



**Figure 4-8. Removing 2 screws for C408PNL board**

5. Remove the Panel Shield Plate and the C408PNL-B board from the Operation Panel Assembly.

REASSEMBLY

■ **Tightening torque for screw**

- C.B.P 3x8, F/ZN screw for printer panel board: 6 +/- 1 kgf.cm

CHECK POINT

■ **Removing the Operation Panel Assembly also separates the stacker assembly from the Printer Mechanism, since the Stacker Assembly is held with Operation Panel.**

### 4.2.2.2 Monochrome panel board removal

1. Remove the housing. (Refer to Section 4.2.1 "Housing Removal")
2. Remove four screws (C.B.P. 3x8, F/ZN) and detach the monochrome panel board.
3. Remove two screws (C.B.S. 3x6, F/ZN) located on the rear of the monochrome panel board and detach the panel shield plate.

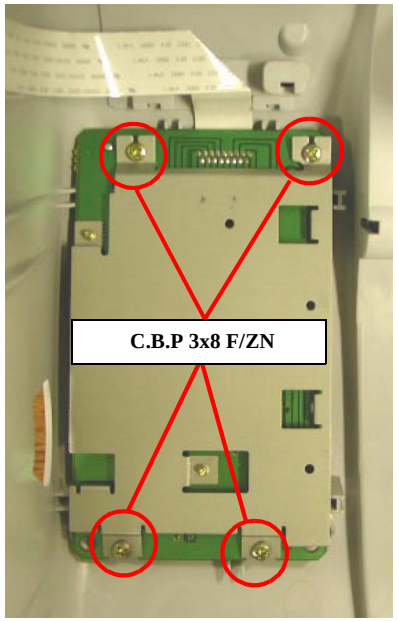



**Figure 4-9. Monochrome panel board**

4. Remove the FFC from the monochrome panel board connector.

CAUTION

■ **Pay attention since the buttons of monochrome panel will be not fixed anymore if the monochrome panel board is detached.**

REASSEMBLY

■ **Tightening torque for screw**

- C.B.S 3x6, F/ZN screw for monochrome panel board: 6 +/- 1 kgf.cm
- C.B.P 3x8, F/ZN screw for panel shield plate: 6 +/- 1 kgf.cm

## 4.2.3 Housing Lower Cover Removal

There are two housing lower covers on the right and left sides of a printer.

### 4.2.3.1 Housing Lower Cover Left Removal

1. Remove the housing from the printer. (Refer to Section 4.2.1 "Housing Removal")
2. Remove two screws (C.B.S. 3x6, F/ZN and C.B.P. 3x8, F/ZN) and detach the Sub Left Panel Housing from the printer mechanism. (Detach the stacker at the same time)

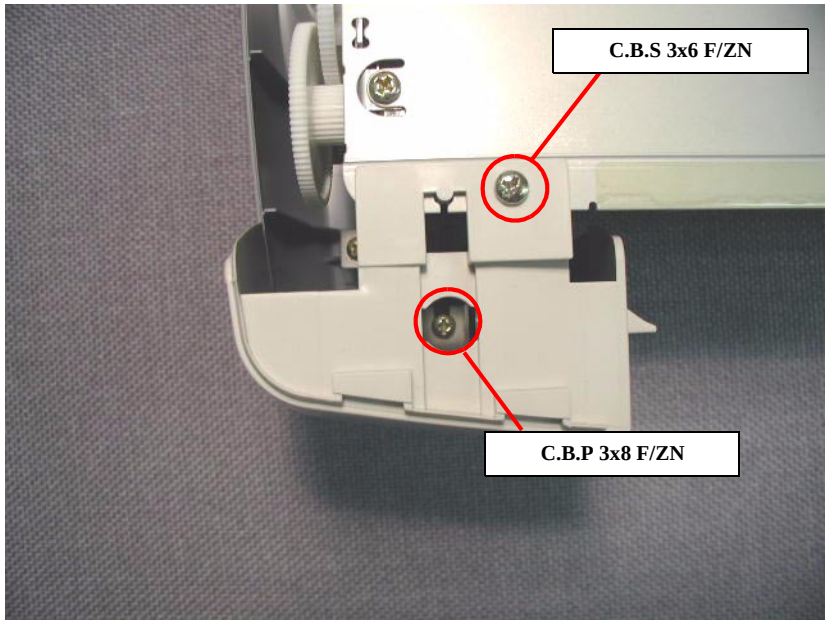



**Figure 4-10. Sub Left Panel Removal**

REASSEMBLY

■ **Tightening torque for screw**

- C.B.S 3x6 F/ZN screw for Sub Panel Housing on the printer side: 9 +/- 1 kgf.cm
- C.B.P 3x8 F/ZN screw for Sub Panel Housing on the lower cover side: 6 +/- 1 kgf.cm

3. Remove three screws (C.B.P. 3x8, F/ZN) from the left housing lower cover and detach the cover.

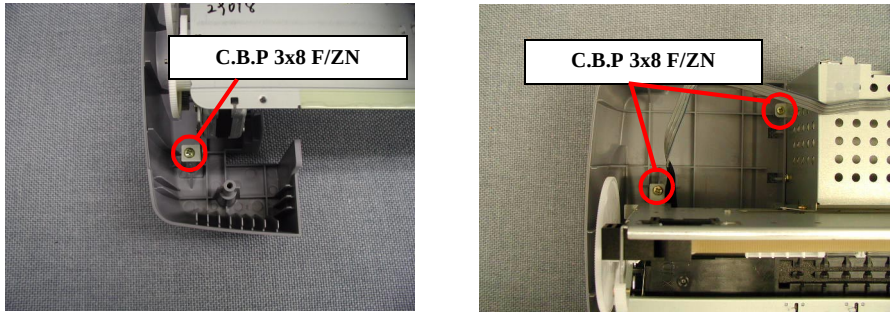



**Figure 4-11. Housing Lower Cover Left Removal**

REASSEMBLY

■ **Tightening torque for screw**

- C.B.P 3x8, F/ZN three screws for housing lower cover: 6 +/- 1 kgf.cm

### 4.2.3.2 Housing Lower Cover Right Removal

1. Detach the housing from the printer. (Refer to Section 4.2.1 "Housing Removal")
2. Detach the printer panel from the printer. (Refer to section 4.2.2.1 "Printer Panel Board Removal")
3. Remove two screws (C.P. 3x4, F/ZN) from the throttle upper part and detach the throttle front panel.
4. Remove five screws (C.B.P. 3x8, F/ZN and C.B.S. 3x6, F/ZN) from the right housing lower cover and detach the cover.

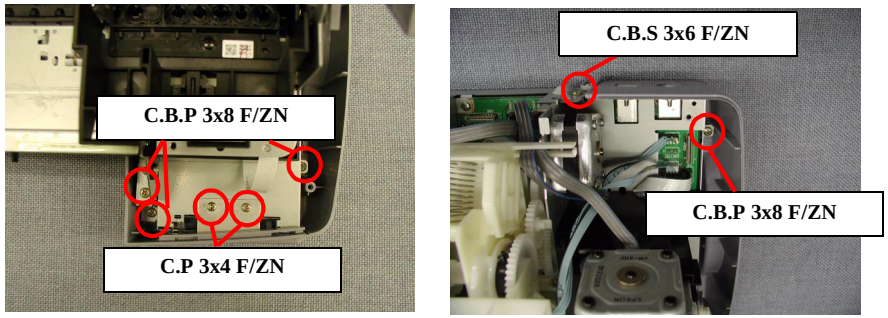



**Figure 4-12. Housing Lower Cover Right Removal**

■ **Tightening torque for screw**

- C.P 3x4, F/ZN two screws for throttle upper part: 3.5 +/- 1 kgf.cm
- C.B.P 3x8, F/ZN four screws for housing lower cover: 6 +/- 1 kgf.cm
- C.B.S 3x6, F/ZN one screws for housing lower cover: 6 +/- 1 kgf.cm

## 4.2.4 Printhead removal

1. Remove the Housing from the printer. (Refer to Section 4.2.1 "Housing Removal")
2. Open the Cover Cartridge and remove the both black and color ink cartridge.
3. Remove the Cover Cartridges for black and color ink cartridges from the CR Assembly.
4. Remove the Head FFC Holder from the CR Assembly by releasing two hooks.

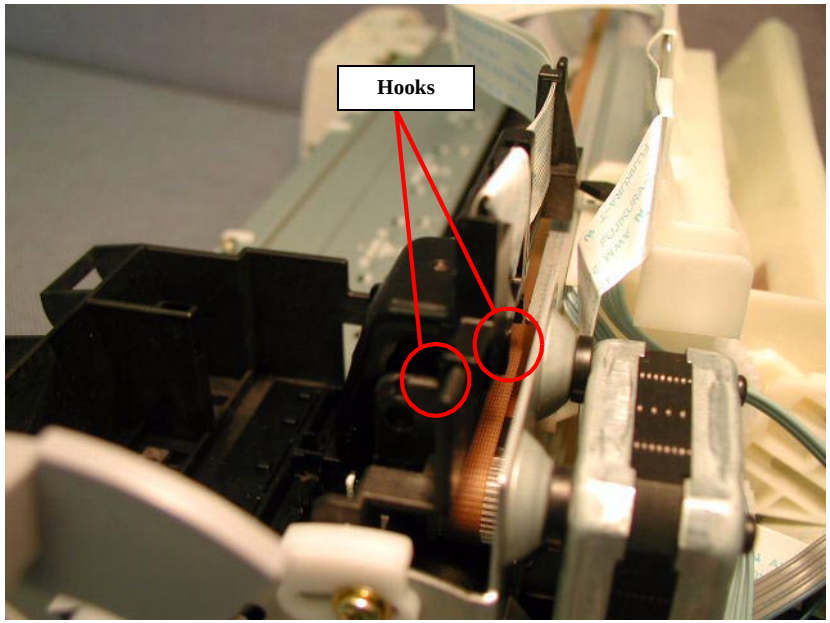



**Figure 4-13. Removing the Head FFC Holder**

5. Disconnect the Printhead's FFC from the connector on the Printhead.
6. Remove two screws (C.B.P-TITE 3x8 F/ZN and B-TITE SEMSW2 2.5x5 F/ZB) tightening the Printhead

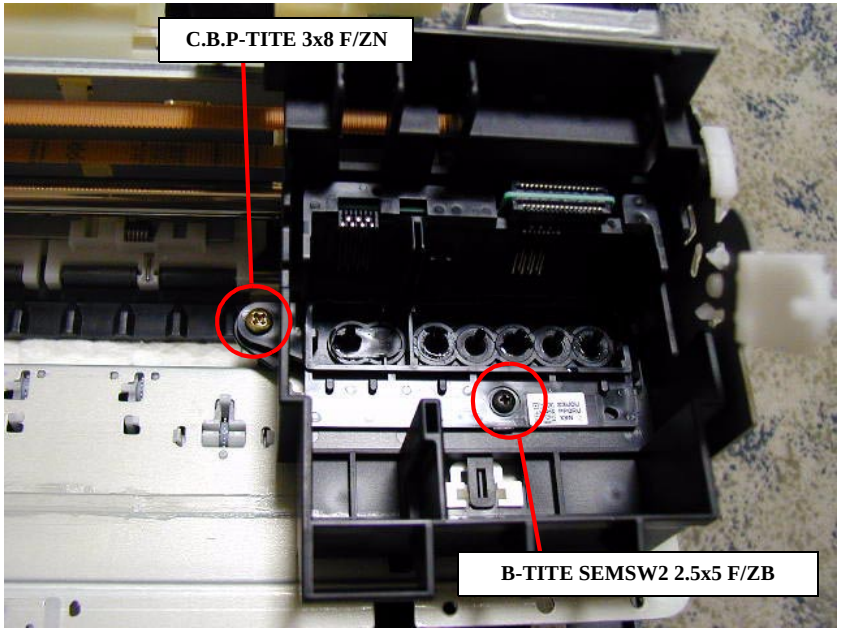



**Figure 4-14. Removing the two screws tightening the Printhead**

7. Remove the Printhead from the CR unit

CHECK POINT

- **Place the Printhead's FFC in the cable holder by the four portions indicated in the following Figure 4-15. "Placing the Printhead's FFC".**
- **Make sure that the Head Grounding Plate is installed to the carriage correctly. Refer to Figure 4-16. "Printhead installing the position pin & the grounding plate".**
- **Make sure that two holes of the Printhead correctly fit in the installing position pins. Figure 4-16. "Printhead installing the position pin & the grounding plate".**
- **Installation of I/C must be carried out by I/C replacement sequence. Otherwise, ink may not eject properly.**

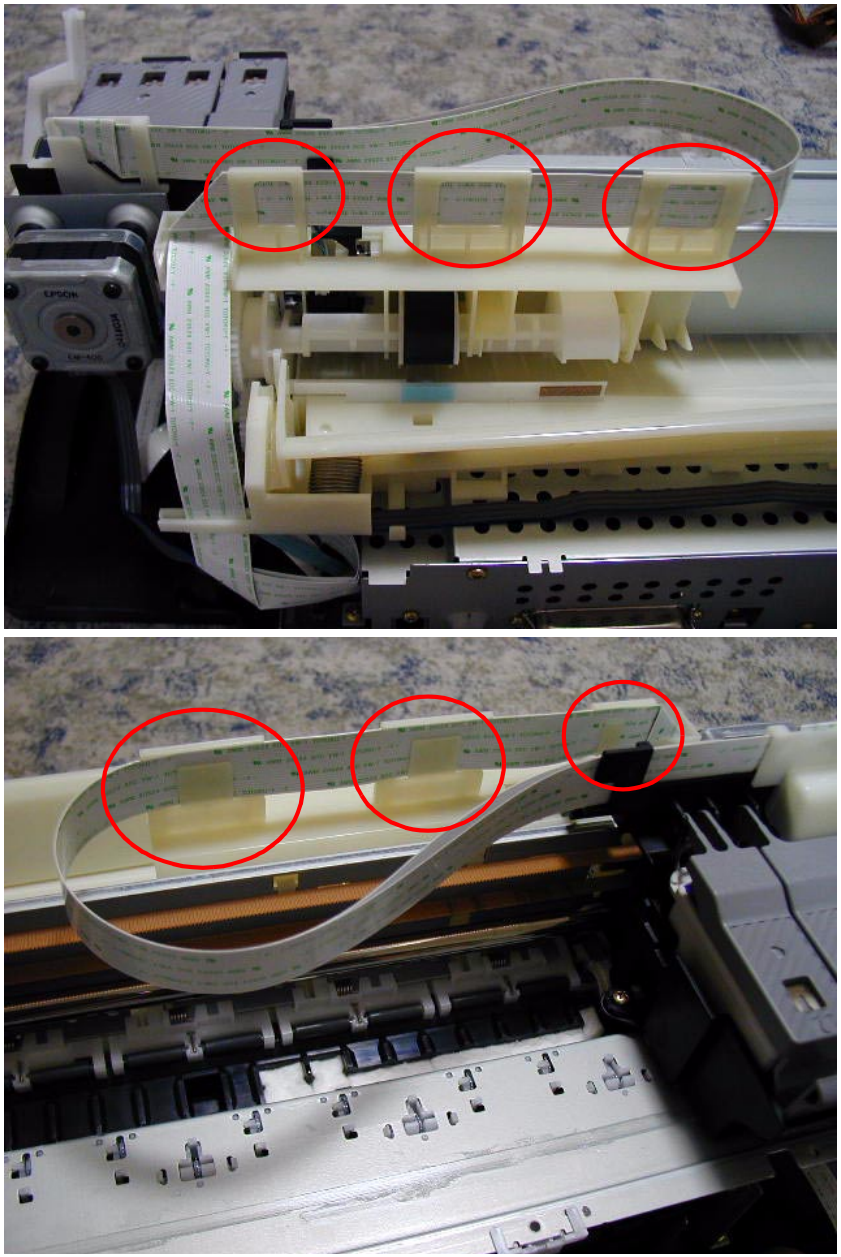


Figure 4-15. Placing the Printhead's FFC

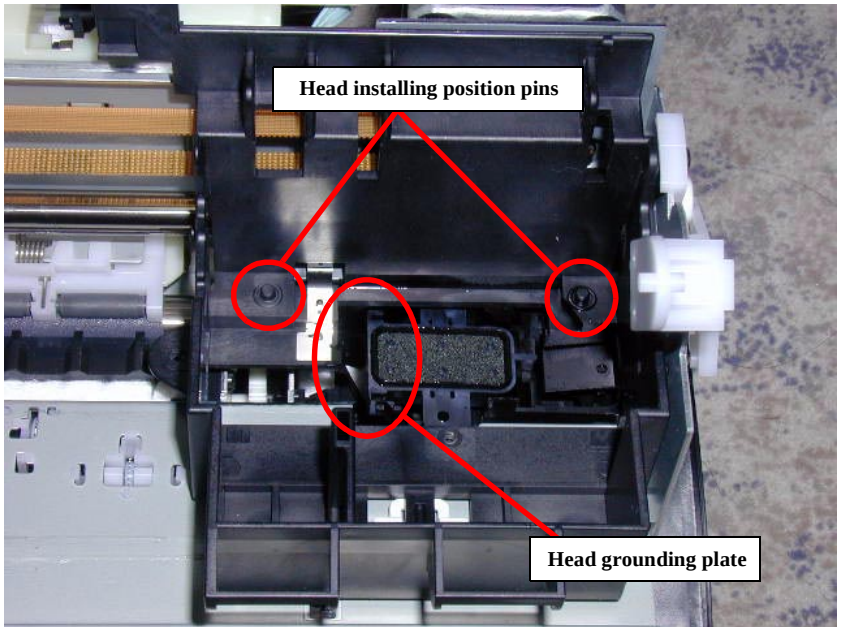



Figure 4-16. Printhead installing the position pin & the grounding plate

REASSEMBLY

■ **Tightening Torque for screw**

- C.B.P-TITE 3x8 F/ZN screw for printhead: 6 +/- 1 kgf.cm
- B-TITE SEMSW2 2.5x5, F/ZB screw for printhead: 2 +/- 0.5 kgf.cm

ADJUSTMENT REQUIRED

**When the Printhead is replaced with a new one, following adjustments must be performed in the order below:**

1. **Initial ink charge**
2. **Printhead ID input**
3. **Bi-d adjustment**

**When the Printhead is removed and reinstalled, only the following adjustment is required.**

1. **Head cleaning**
2. **Bi-d adjustment**

## 4.2.5 CR motor removal

1. Remove the Housing from the printer. (Refer to Section 4.2.1 "Housing Removal")
2. Using tweezers or a small screwdriver, slide the CR Lock Lever to front and release the CR Lock Lever from the CR unit.
3. Loosen the CR Timing Belt by pushing the Driven Pulley Holder to right using a screwdriver, and remove the Timing Belt carefully from the pinion gear on the CR motor. Refer to Figure 4-17. "Removing the Timing Belt".

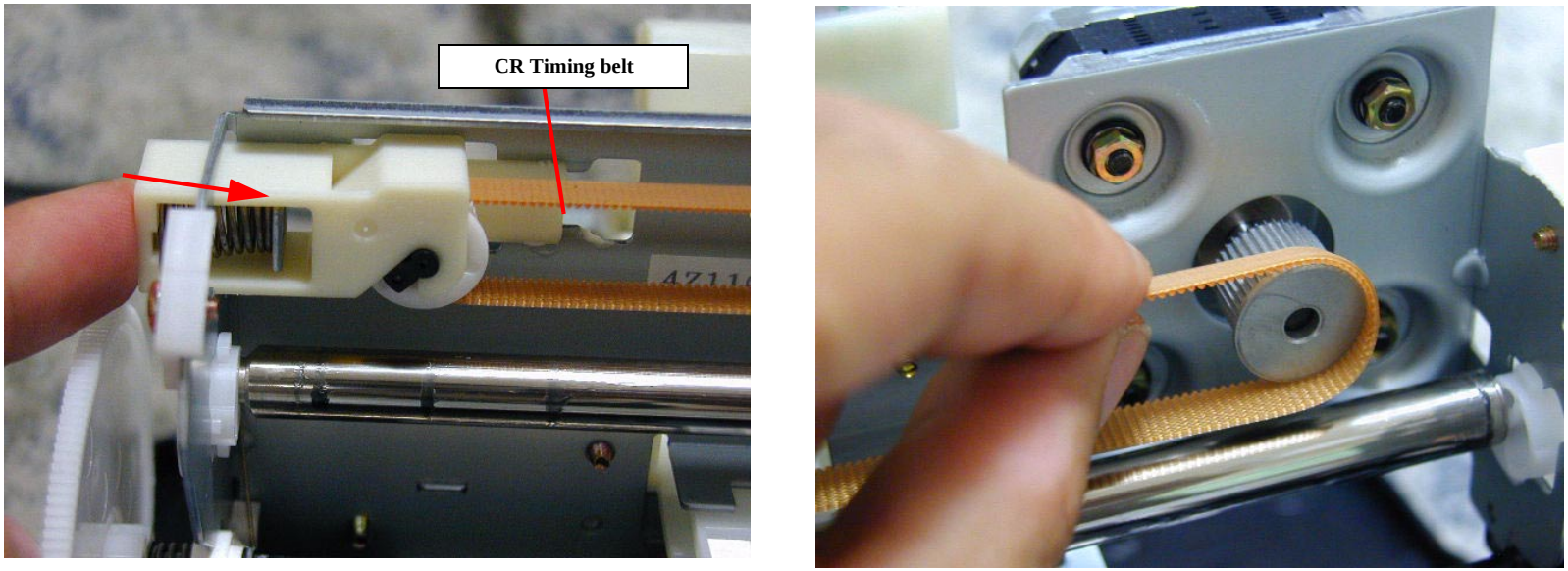



**Figure 4-17. Removing the Timing Belt**

4. Remove four Hexagon Nuts while holding the CR motor and remove the CR motor assembly. (Remove two hexagon nuts on the lower side with a one side open-end wrench)

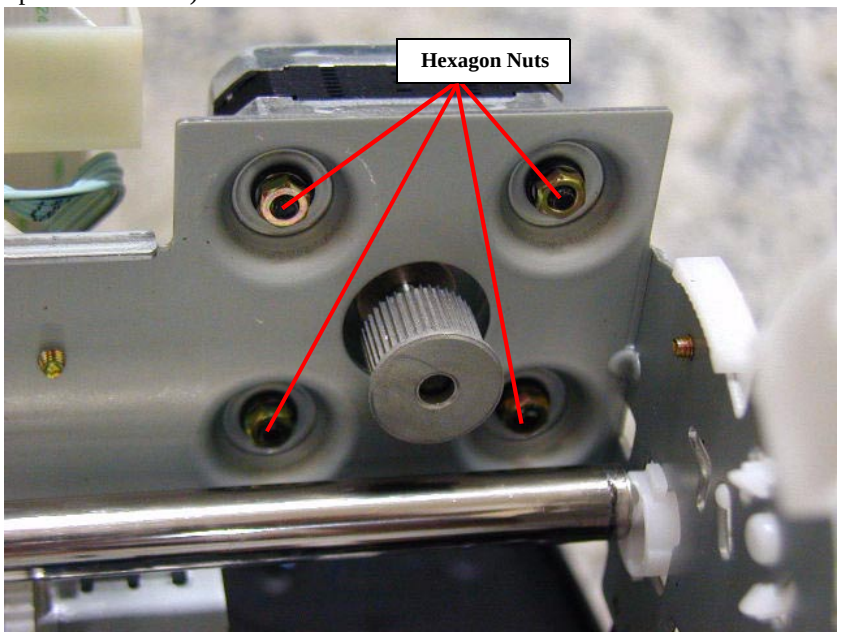



**Figure 4-18. Removing the CR motor**

5. Disconnect the CR motor connector cable from the CN13 on the Main board with tweezers

ADJUSTMENT REQUIRED

- **The Gap adjustment (Bi-d adjustment) is required when the CR motor is removed or replaced.**

REASSEMBLY

- **Connect the CR motor connector cable to the CN13 on the Main board. Use of tweezers or pincers is recommended to facilitate the job, since the CN13 is located near the rear edge of the Main board.**
- **Tightening Torque for screw**
  - M3 hexagon nut for the CR Motor: 9 +/- 1 kgf.cm

## 4.2.6 Waste drain ink pad unit removal

1. Remove the Housing from the printer. (Refer to Section 4.2.1 "Housing Removal")
2. Remove two screws (C.B.S. 3x6, F/ZN and C.B.P. 3x8, F/ZN) and detach the Sub Left Panel Housing from the printer mechanism. (Detach the stacker at the same time)

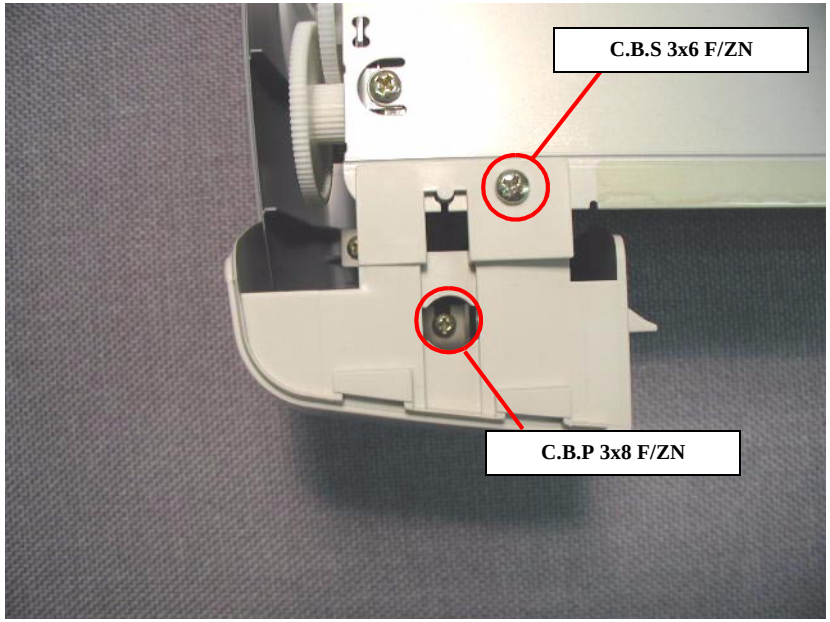



**Figure 4-19. Removing the waste drain inkpad unit**

3. Lift the left side of printer and disengage the hook of waste drain ink pad unit, then pull out the waste drain ink pad unit to remove.

CHECK POINT

- **When attaching the waste drain inkpad, check that the tip of waste ink tube is correctly placed at the specified position of waste drain inkpad. If the waste ink tube is not correctly attached, ink leakage may occur. Refer to Figure 4-20. "Tip of the waste ink tube setting position".**

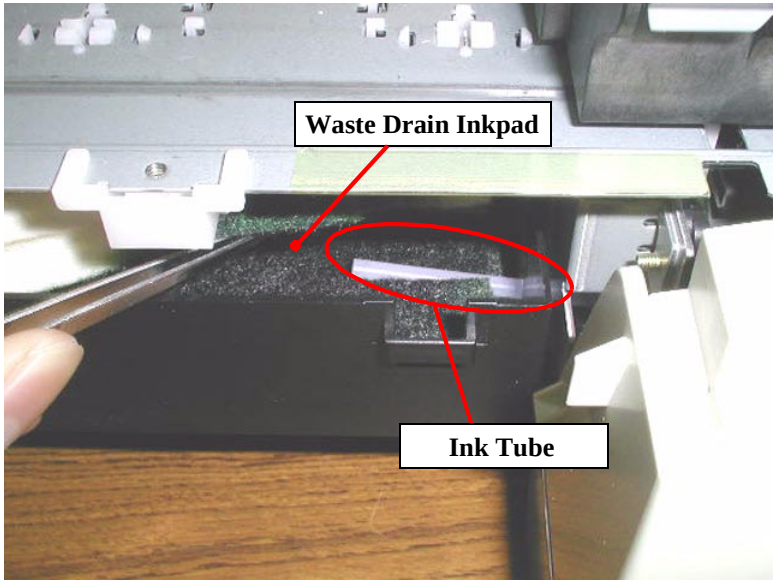



**Figure 4-20. Tip of the waste ink tube setting position**

ADJUSTMENT REQUIRED

**When the Waste drain ink pad is replaced with a new one, following service item is required.**

- **Waste drain ink counter reset operation.**

## 4.2.7 Printer mechanism removal

1. Detach the housing from the printer. (Refer to Section 4.2.1 "Housing Removal")
2. Detach the printer panel from the printer. (Refer to Section 4.2.2.1 "Printer Panel Board Removal")
3. Remove the Sub Left Panel and left housing lower cover from the printer. (Refer to Section 4.2.3.1 "Housing Lower Cover Left Removal")
4. Remove five screws as shown here.

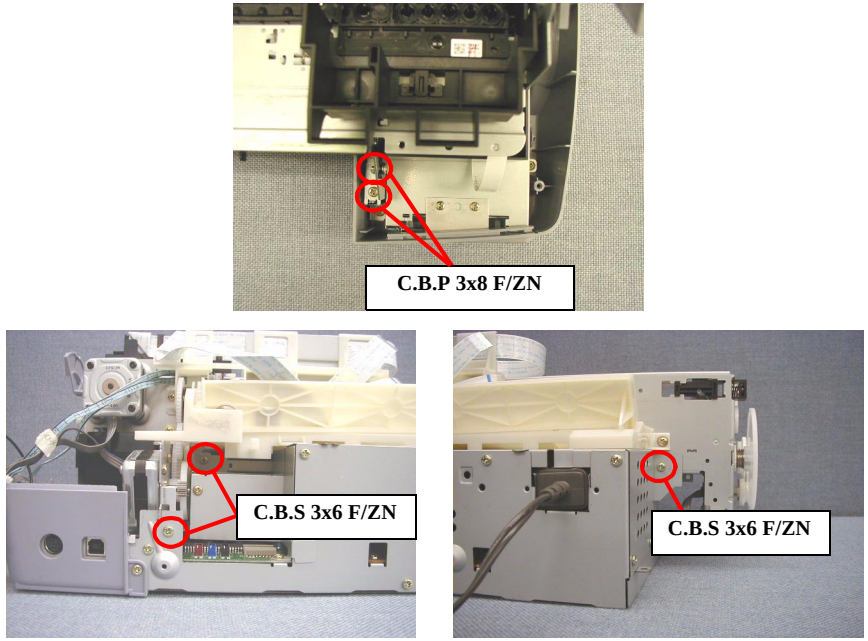



**Figure 4-21. Printer mechanism removal**

5. Disconnect the following 7 cables from the Main board.
   - CR motor connector cable: CN13
   - PF motor connector cable: CN12
   - ASF motor connector cable: CN11
   - Printhead FFC: CN8, CN9
   - HP sensor cable: CN4
   - PE sensor cable: CN5
6. Remove the printer mechanism from the printer. (Remove the waste drain ink pad at the same time.)

CAUTION

- **Be careful not to drop the waste drain ink pad since it is removed together with the printer mechanism when it is removed from the printer.**

REASSEMBLY

- **Make sure to connect the cables that were disconnected when the printer mechanism was removed from the Main board.**
- **Tightening torque for screw**
  - C.B.S 3x6 F/ZN screw for three screws securing the printer mechanism from the rear of printer: 9+/-1 kgf.cm
  - C.B.P 3x8 F/ZN screw for screw on the throttle: 6+/-1 kgf.cm

## 4.2.8 Circuit board removal

1. Remove the Housing from the printer. (Refer to Section 4.2.1 "Housing Removal")
2. Detach the printer panel and Sub Left Panel from the printer. (Refer to Section 4.2.2 "Operation Panel removal")
3. Remove the Waste drain inkpad. (Refer to Section 4.2.6 "Waste drain ink pad unit removal")
4. Remove the printer mechanism from printer. (Refer to Section 4.2.7 "Printer mechanism removal")
5. Remove 10 screws to detach the board cover as shown below.

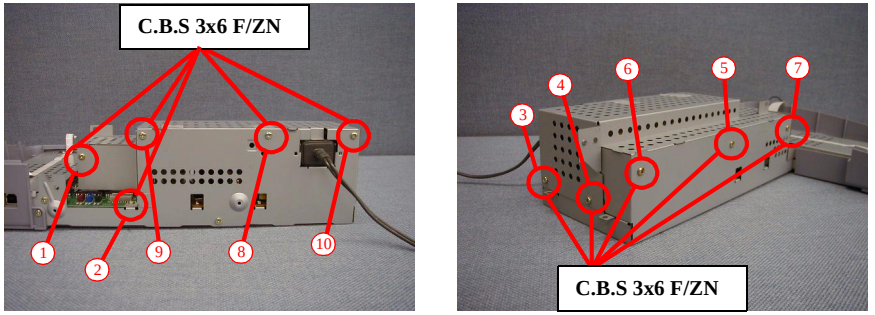



**Figure 4-22. Board cover removal**

6. Remove the right housing lower cover from the board assembly. (Refer to Section 4.2.3.2 "Housing Lower Cover Right Removal")

7. Remove the following screws securing each circuit board to the Shield plate. Refer to Figure 4-23. "Panel shield plate removal".

8. Remove two screws (C.F.S-TITE 3x8, F/ZN) for the AC120V cable and one screw (C.B.(O) 4x5, F/ZG) for the ground cable.

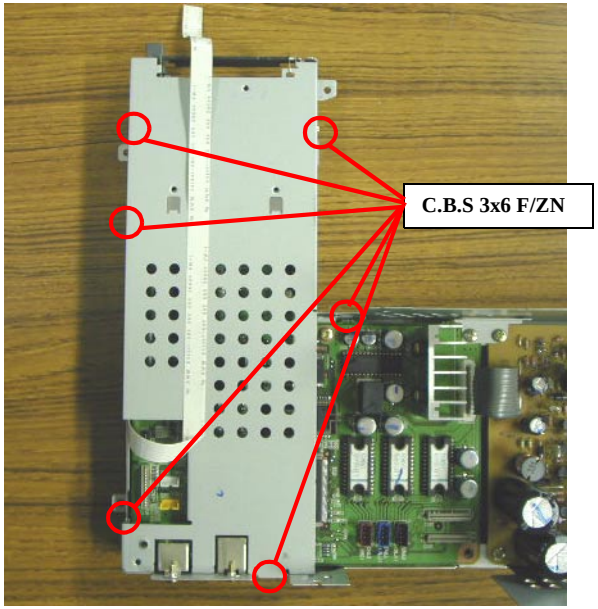



**Figure 4-23. Panel shield plate removal**

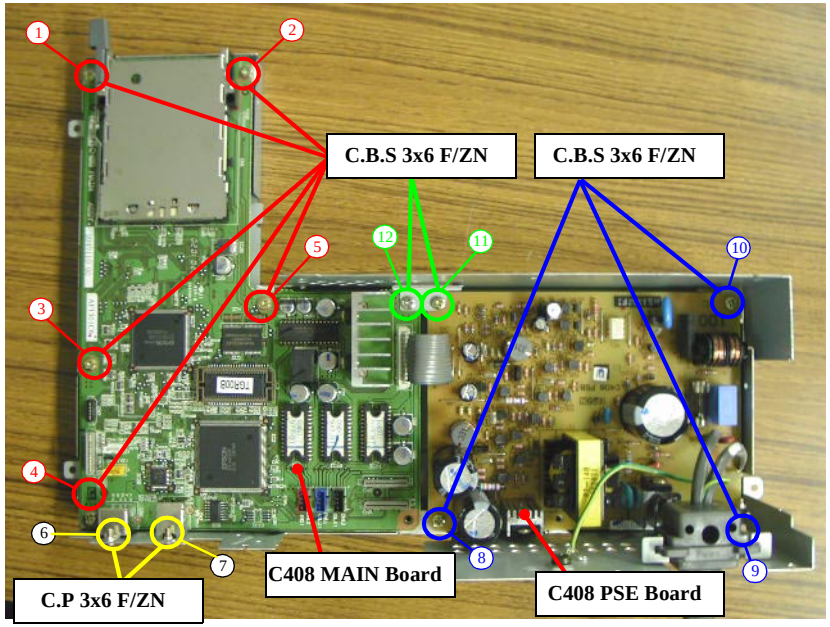



**Figure 4-24. Remove the screw securing each circuit board**

- C408 MAIN: Remove nine screws.
  C.B.S 3x6 F/ZN (Red/Green circled screws): 7pcs (for Main board)
  C.P. 3x6 F/ZN (Yellow circled screws): 2pcs (USB interface connector, preview monitor connector)

- C408 PSE: Remove five screws.
  C.B.S 3x6 F/ZN (Blue/Green circled screws): 5pcs (for PSE board)

ADJUSTMENT REQUIRED

**When replacing the Main board with a new one, perform the following service items.**

- **Replace the both ink cartridges with a brand new one.**
- **Replace the Waste ink drain pad with a new one.**
- **Write the initial setting value.**
- **Input the Printhead ID.**
- **Adjust the Bi-d alignment.**
- **Write USB-ID.**
- **Confirm the memory card drive.**

REASSEMBLY

- **Tightening Torque for screw**

| | |
|---|---|
| • C.B.S 3x6 F/ZN screw for Board cover | : 6+/- 1kgf.cm |
| • C.B.S 3x6 F/ZN screw for Panel shield plate: | : 6+/- 1kgf.cm |
| • C.B.S 3x6 F/ZN screw for Main board | : 6+/- 1kgf.cm |
| • C.P 3x6 F/ZN screw for USB interface, preview monitor | : 3.5+/- 1kgf.cm |
| • C.B.S 3x6 F/ZN screw for PSE board | : 6+/- 1kgf.cm |
| • C.F.S-TITE 3x8, F/ZN screw for AC120V cable | : 6+/- 1kgf.cm |
| • C.B.(O) 4x5 F/ZG screw for Earth cable | : 11+/-1kgf.cm |

- **When reassembling the main board tighten screws from lower numbers in Figure 4-22. "Board cover removal".**
- **When reassembling the main board and the circuit board, tighten screws from lower numbers in Figure 4-24. "Remove the screw securing each circuit board".**

CHECK POINT

**Check the Earth terminal and wire position. Refer to the following figure. The earth wire for 120V must be placed back side of the Heat sinker HT1. Be sure to leave at least 2.5 mm of space between heat sink HT1 and the wire. If this is not possible, secure the wire with tape or other method to be sure that a minimum of 2.5 mm spacing is preserved.And the earth wire for 220V must be placed in front of the Heat sinker HT1 as following figure**

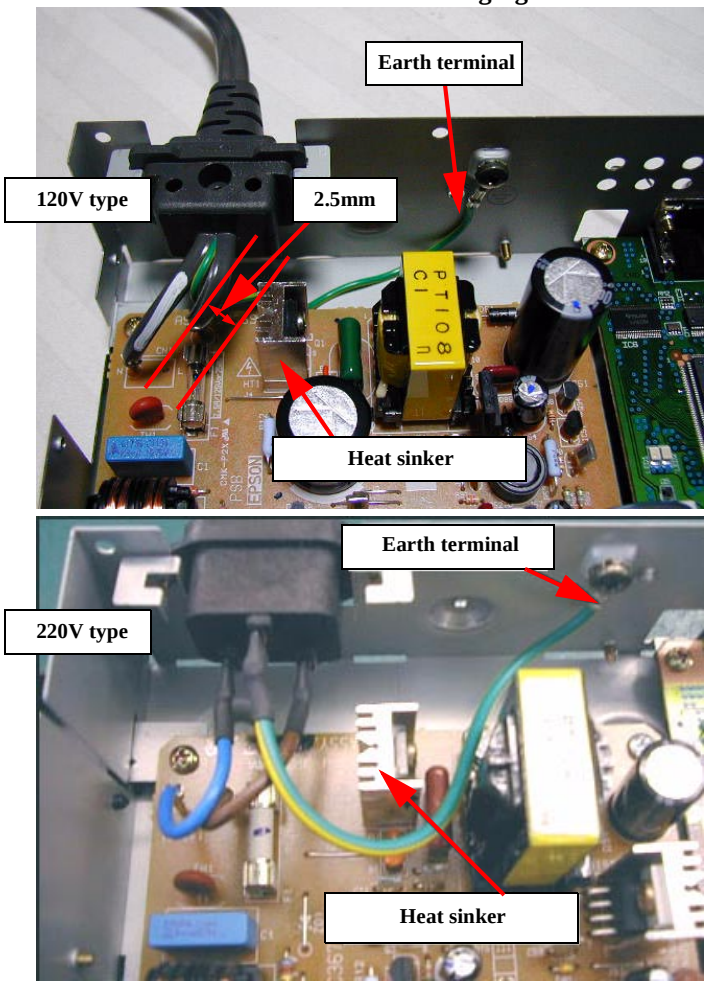



**Figure 4-25. Earth terminal and wire position**

## 4.2.9 LD Roller removal

1. Remove the Housing from the printer. (Refer to Section 4.2.1 "Housing Removal")
2. Take the Head FFC off from the Head FFC holder located along the LD roller shaft holder.

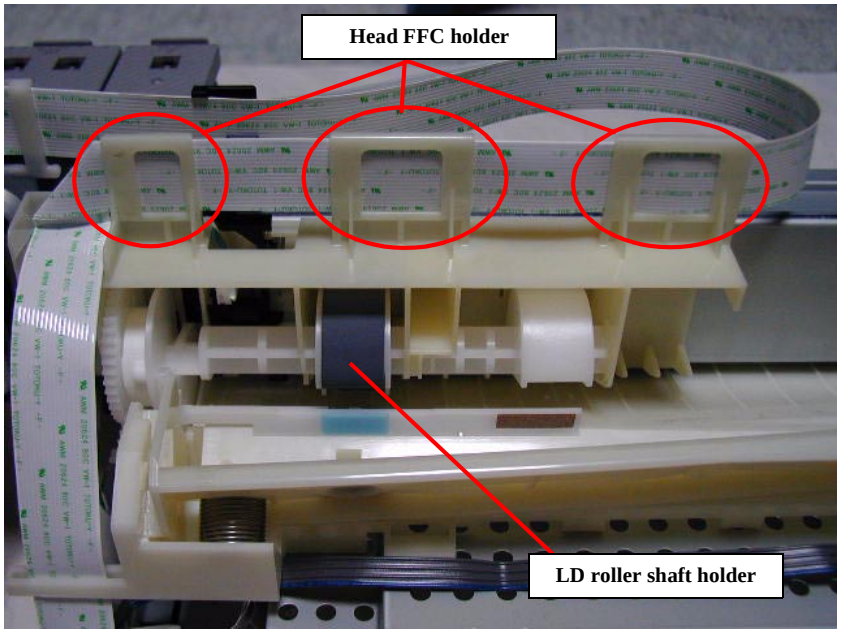



**Figure 4-26. Taking Head FFC out from the FFC holder**

3. Remove two screws (C.B.S 3x6 F/ZN) securing the LD roller holder to the Main frame.

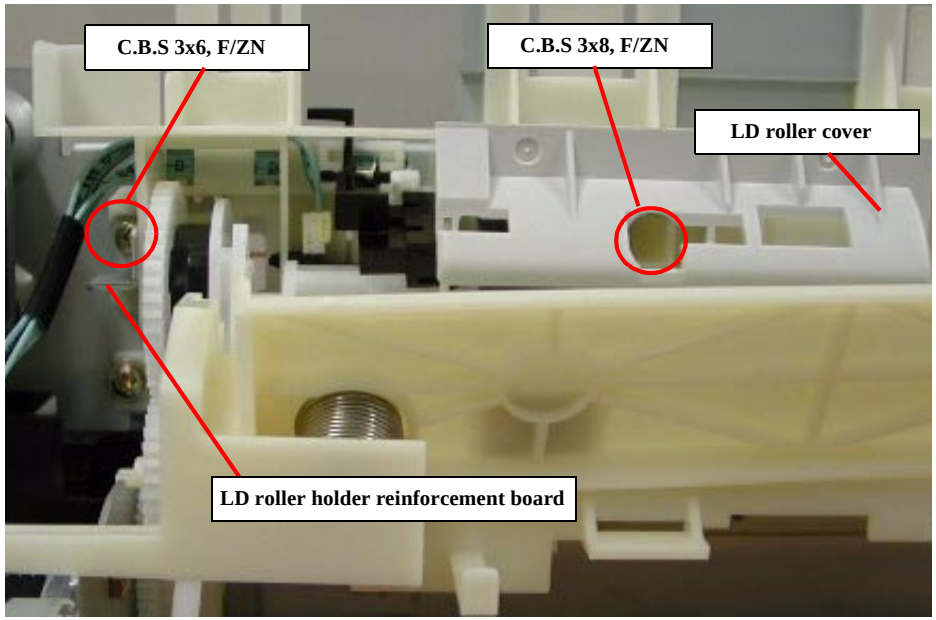



**Figure 4-27. Removing two screws securing the LD roller holder**

REASSEMBLY

■ **Tightening Torque for screw**

- C.B.S 3x6, F/ZN screw for screw securing the LD roller holder: 9 +/- 1 kgf.cm
- C.B.S 3x8, F/ZN screw for screw securing the LD roller holder: 9 +/- 1 kgf.cm

4. Push the two hooks of the LD roller shaft holder as shown in the following figure.
5. Pull the LD roller shaft holder unit upward from the Main frame.

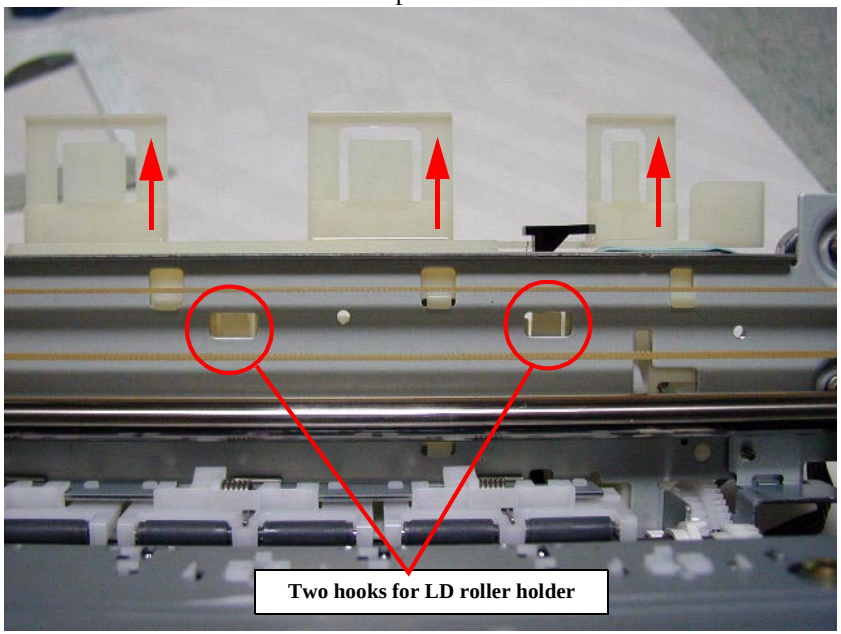



**Figure 4-28. Pushing two hooks of the LD roller shaft holder**

6. Remove the LD roller along with the Clutch mechanism from the LD roller shaft holder unit.

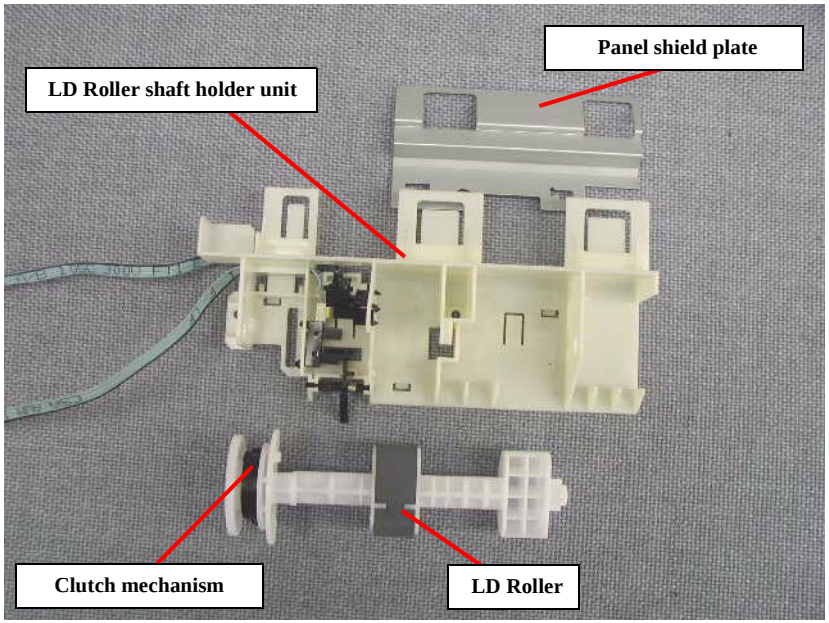



**Figure 4-29. Removing the LD roller with Clutch mechanism**

CAUTION

- Do not damage the tooth of the Spur gear 35.2 and the Spur gear 23.2 when assembling the LD roller shaft holder unit

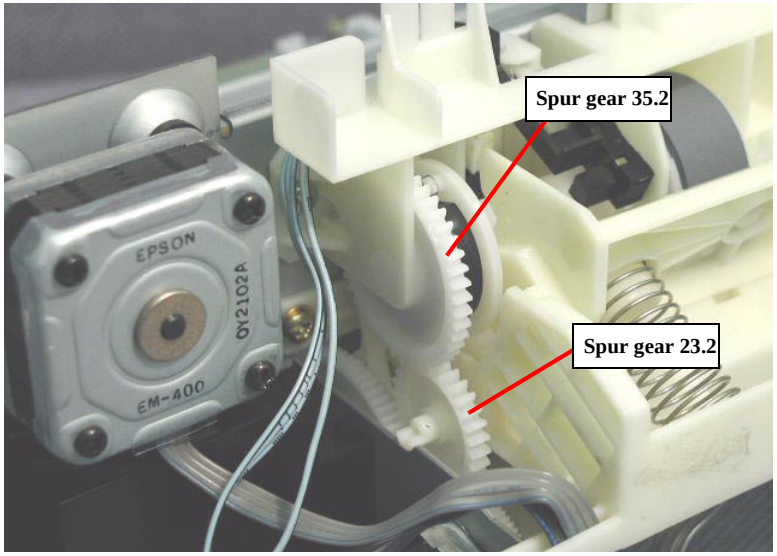



Figure 4-30. Spur Gear 23.2 and Spur Gear 35.2

REASSEMBLY

- Before assembling the LD roller shaft, make sure that the round hole of the Clutch is set on the protrusion on the LD roller shaft as shown in the following figure.

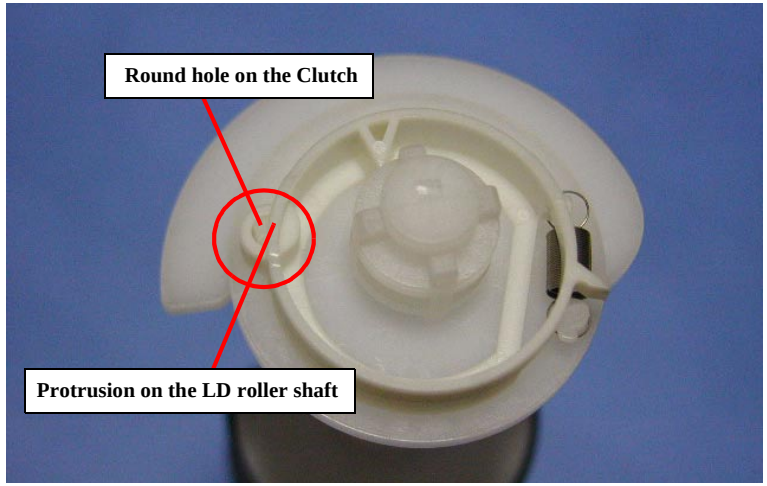



Figure 4-31. Assembling the Clutch

- Assemble the LD roller shaft holder unit to the printer mechanism in the following procedure.

1. Set the tip of the Change lever to the printer front side.

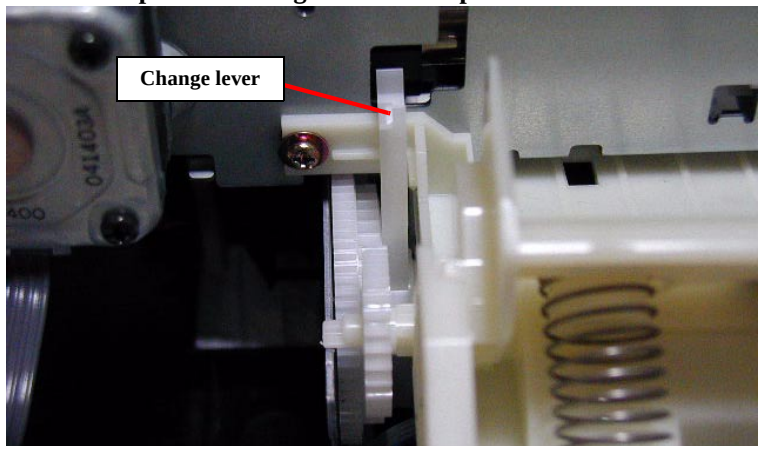



Figure 4-32. LD Roller shaft holder assembling procedure (1)

REASSEMBLY

2. **Assemble the LD roller shaft holder unit while storing the Paper return plate into the ASF frame**

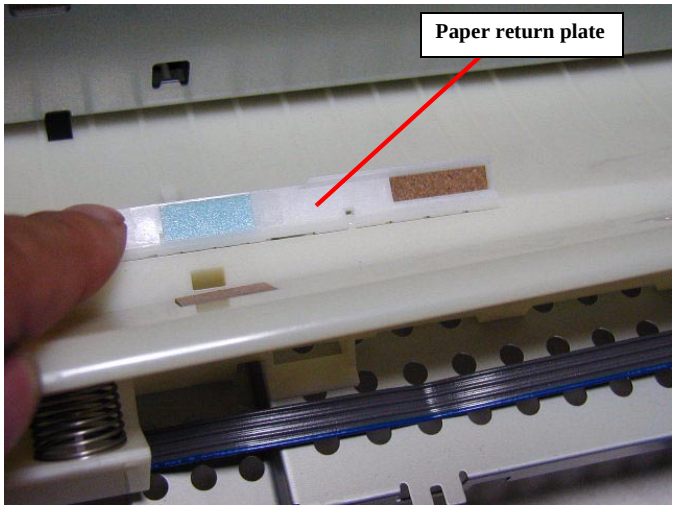



**Figure 4-33. LD Roller shaft holder assembling procedure (2)**

3. **Make sure the PE detection lever is the same as the following figure.**

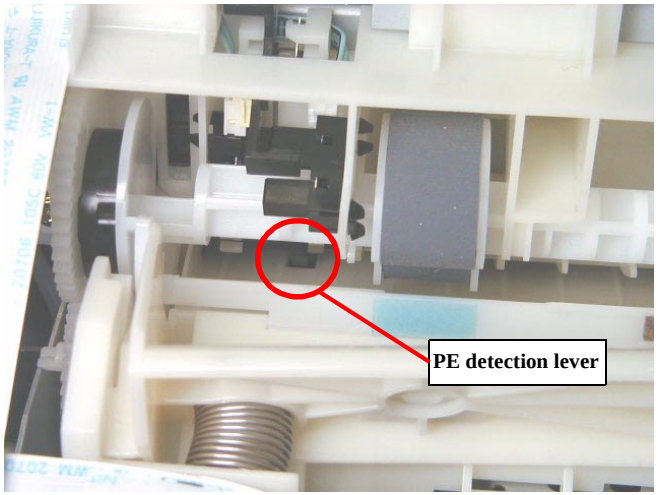



**Figure 4-34. Correct position of the PE detection lever**

REASSEMBLY

■ **Fasten the LD roller shaft holder with two screws (C.B.S 3x6 F/ZN) in the order indicated in the following figure.**

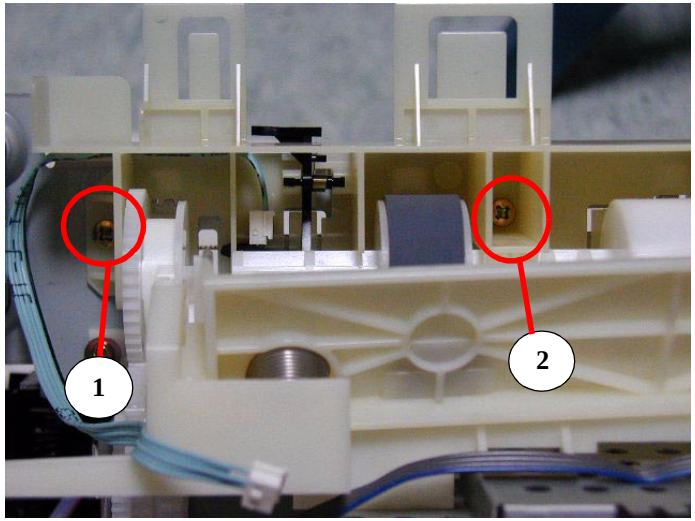



**Figure 4-35. Fastening the LD roller shaft holder**

■ **Tightening torque for screw**

- C.B.S 3x6 F/ZN screw for LD roller shaft holder unit: 9+/1 kgf.cm

## 4.2.10 HP/PE Sensor removal

1. Remove the Housing from the printer. (Refer to Section 4.2.1 "Housing Removal")
2. Remove the LD roller from the LD roller shaft holder. (Refer to Section 4.2.9 "LD Roller removal")
3. Remove HP or PE detection lever from the LD roller shaft holder and disconnect the cable from the sensor connector

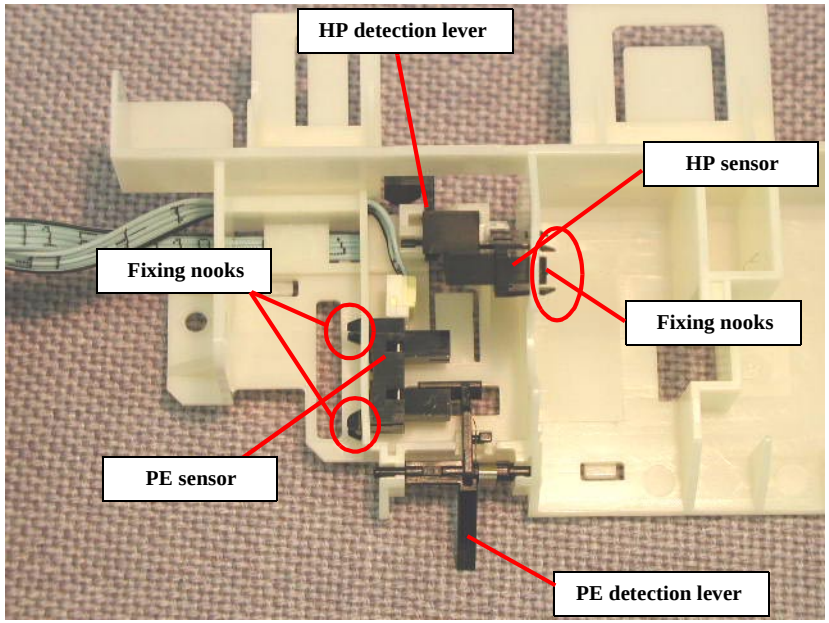



**Figure 4-36. Removing the HP or PE detection lever**

4. Release each two hooks of HP and PE sensors securing them from the LD roller, then remove the sensors.

CHECK POINT

- **Make sure that the Torsion spring 0.22 is hung to the following suitable position**

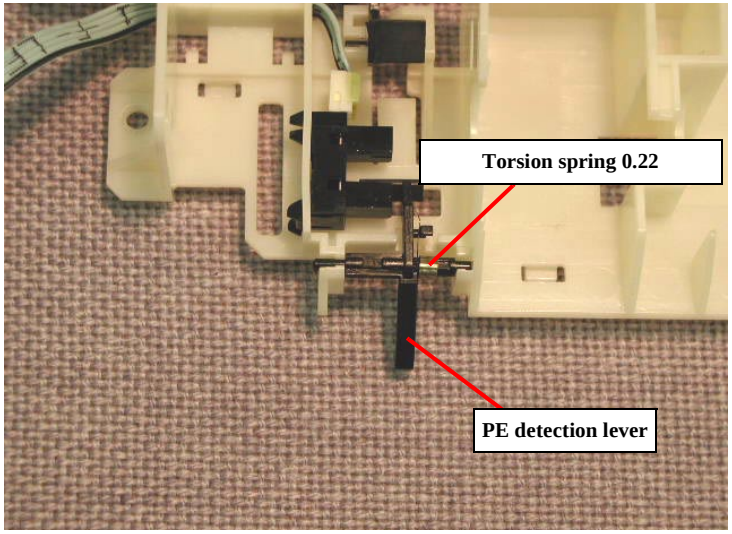



**Figure 4-37. Torsion spring 0.22 for PE detection lever**

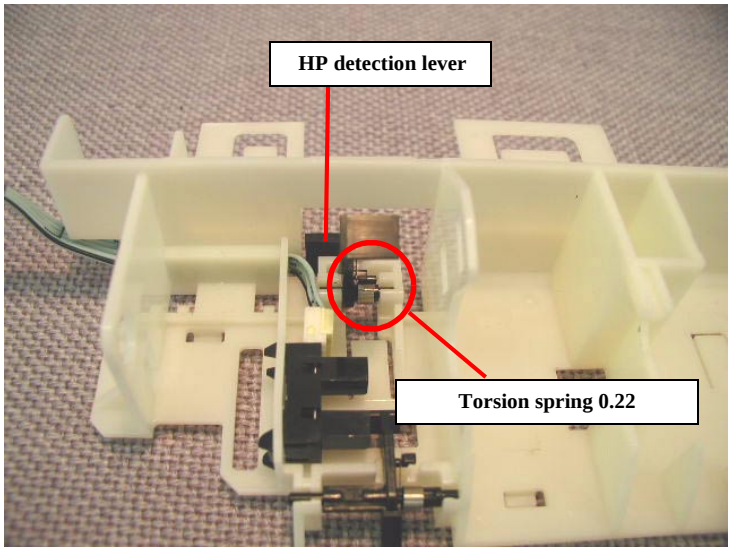



**Figure 4-38. Torsion spring 0.22 for HP detection lever**

- **Make sure that the HP or PE sensor cable is placed to the suitable groove on the LD roller shaft holder.**

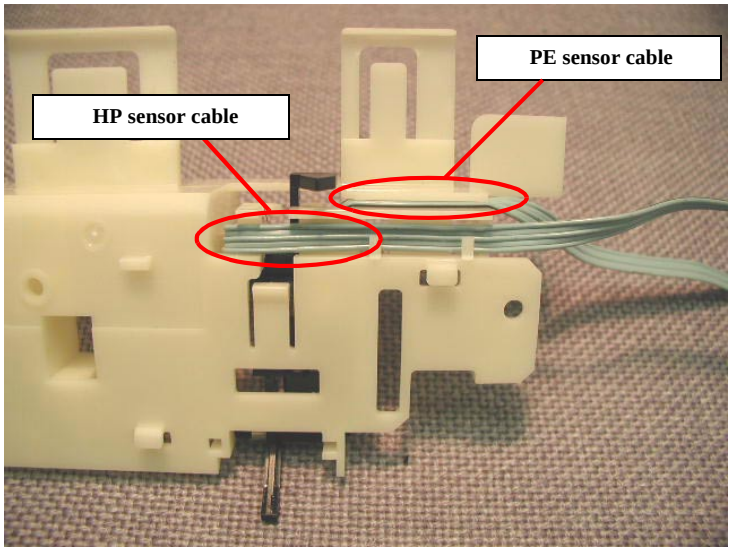



**Figure 4-39. Sensor cable placing position**

- **Make sure that the each sensor lever turn back smoothly by moving it after the sensor was assembled to the LD roller shaft holder.**

## 4.2.11 Ink system unit removal (Cap & Pump unit )

1. Remove the Housing from the printer. (Refer to Section 4.2.1 "Housing Removal")
2. Remove the Waste drain ink pad from the printer. (Refer to Section 4.2.6 "Waste drain ink pad unit removal")
3. Remove one screw (C.B.S (P4) 3x6 F/ZN) and detach the pump unit cover.

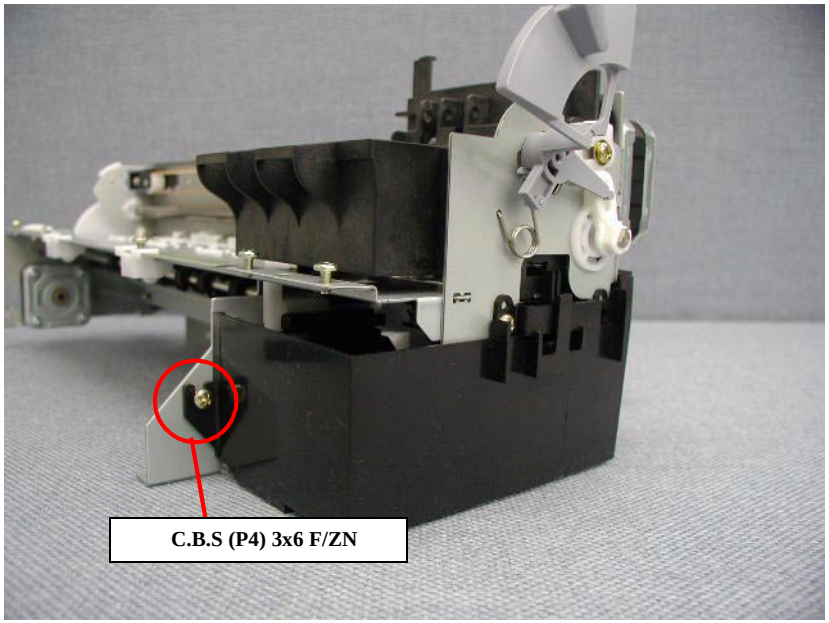



**Figure 4-40. Pump unit cover removal**

4. Remove four screws (C.B.S 3x6 F/ZN) securing the Ink system frame and the Cap assembly to the frame.

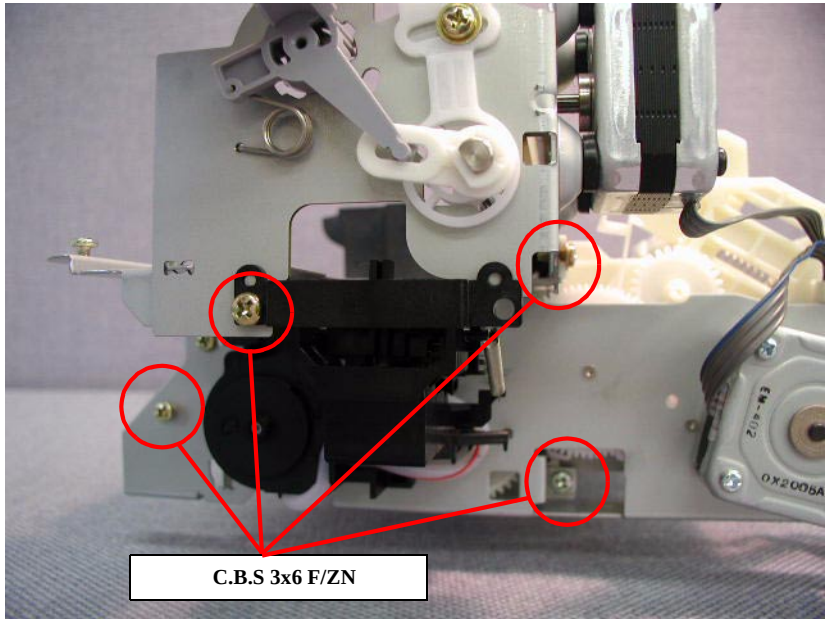



**Figure 4-41. Removing four screws securing the Ink system**

REASSEMBLY

■ **Tightening torque for screw**

- C.B.S (P4) 3x6 F/ZN screw for pump unit cover: 9 +/- 1 kgf.cm
- C.B.S 3x6, F/ZN screw for ink system frame and cap assembly: 9 +/- 1 kgf.cm

5. Remove the Ink system unit (Cap and Pump unit) carefully along with the Ink system frame.

CAUTION

**When the Ink system unit is removed, be careful that the gears do not come off from each shaft on the Ink system frame.**

6. Release one hook for Cap assembly on the Ink system frame and take the Cap assembly out from the Ink system frame.
7. Disconnect the waste drain ink tube carefully from the bottom of the Cap assembly

CAUTION

- **Since the compression spring is included in the Pump assembly, watch out for the spring and the gear that pop out from the unit when the Pump assembly is removed from the Ink system unit.**
- **When replacing the cleaner head built in the Pump assembly, be careful of the following points.**

1) **Do not touch the cleaner head with your bare hands. Ware gloves or use tweezers.**
2) **Do not smear the head cleaner with oil or grease.**

- **When installing the Cleaner head, set the rubber side (black side) facing toward the right side of the frame.**
- **When installing the Cleaner head, set the two square cut offs on the Cleaner head into the two hooks on the Ink system.**

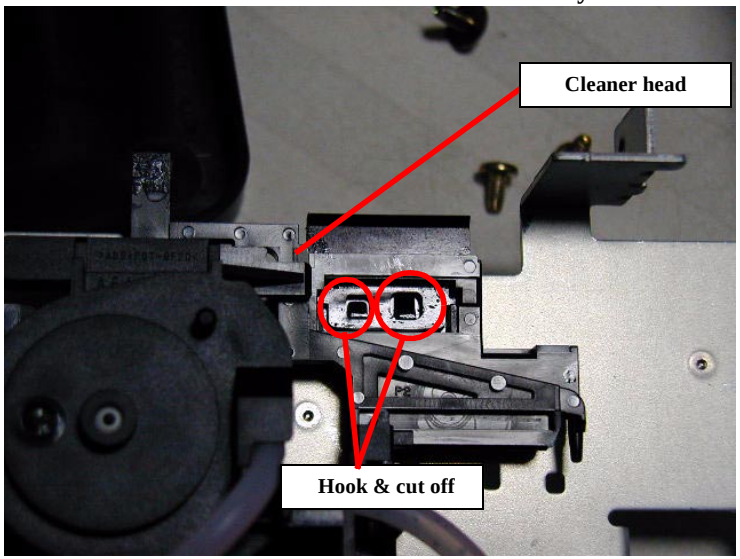



**Figure 4-42. Cleaner Head Assembly**

CAUTION

- **When replacing the Cap Assembly, do not touch the sealing rubber portion of the Cap Assembly.**
- **The component parts in the Pump Assembly are not individually supplied as ASP. So please replace the whole Pump Assembly when replacing the Pump Assembly.**
- **Be careful not to crush or leave any stress on the ink tube connecting the pump assembly and the cap assembly.**

CHECK POINT

■ **Make sure that all gears are set in each gear shaft on the Ink system frame.**

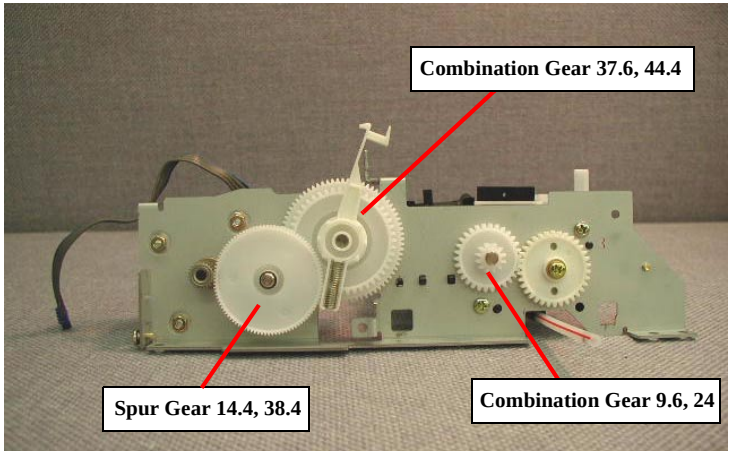



**Figure 4-43. Gear engagement on the Ink system frame**

■ **Make sure that the ink tube is placed along the following position.**

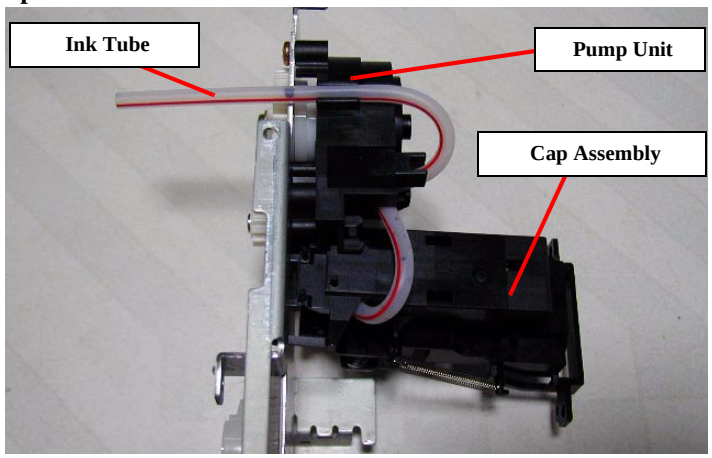



**Figure 4-44. Ink tube placing position**

■ **After installing the Pump Assembly, ensure that the cleaner parts move back and forth by rotating the Gear.**

REASSEMBLY

■ **Tightening torque for screw**

- C.B.S 3x6 F/ZN screw for ink system frame & Cap assembly.: 9+/1 kgf.cm

## 4.2.12 ASF Motor Removal

1. Remove the housing from the printer. (Refer to Section 4.2.1 "Housing Removal")
2. Remove the panel unit from the printer. (Refer to Section 4.2.2 "Operation Panel removal")
3. Remove the printer mechanism from the printer. (Refer to Section 4.2.7 "Printer mechanism removal")
4. Remove three nuts (M3 hexagon nut) securing the ASF motor to the ink system frame.

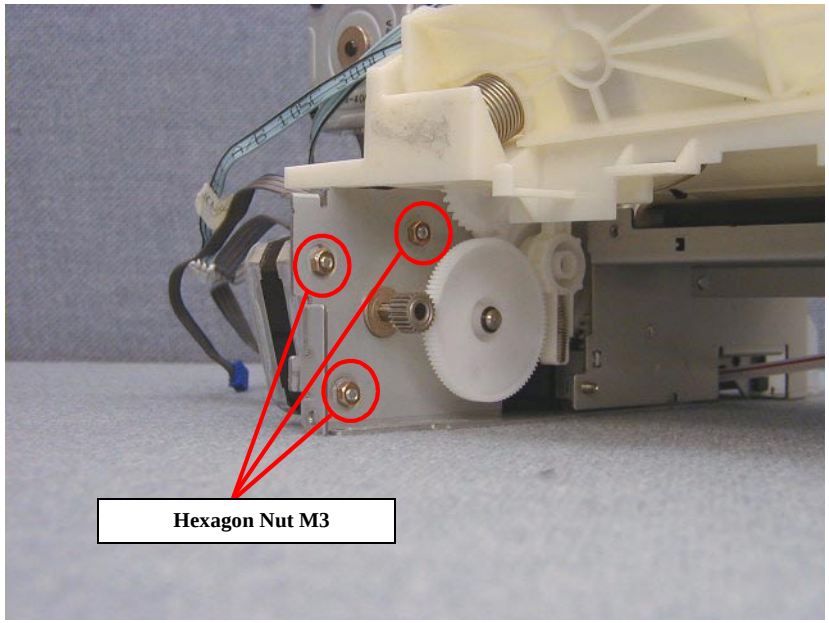



**Figure 4-45. Removing of ASF motor**

5. Disconnect the ASF motor's connector cable from the CN11 on C408 Main board.

6. Remove the ASF motor from the ink system frame.

CAUTION

- **Pay attention not to damage gears when attaching the ink system unit.**

REASSEMBLY

- **Connect the ASF motor connector cable to the CN11 on C408 Main board. It is recommended to use tweezers or small pliers since the CN11 is not located near the rear end of Main board.**
- **Tightening torque for screw**
  - M3 hexagon nut for ASF motor: 6 +/- 1 kgf.cm

## 4.2.13 Paper Eject Roller removal

1. Remove the Housing from the printer. (Refer to Section 4.2.1 "Housing Removal")
2. Remove three screws (C.B.S 3x6 F/ZN) securing the Front frame to the Main frame.

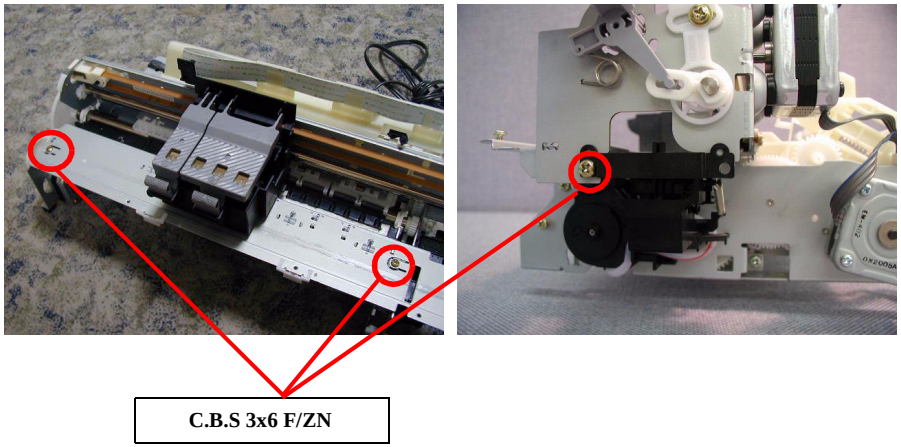



**Figure 4-46. Removing the Front frame**

3. Lift up the right side of the Front frame and slide it to the left side a little bit and then remove it.

CAUTION

**When removing the Front frame, if the CR unit is out of the CR home position, the nozzle surface of the Printhead may come in contact with Paper guide front as soon as the Front frame is removed. This is because the CR unit is held with this frame. Therefore, be sure to set the CR unit in the CR home position before removing the Front frame. Otherwise, the dot missing problem may occur.**

4. Remove the Plain washer and then remove the Combination gear 11.6, 36.8 carefully. Refer to Figure 4-47. "Removing the combination gear 11.6, 36.8".

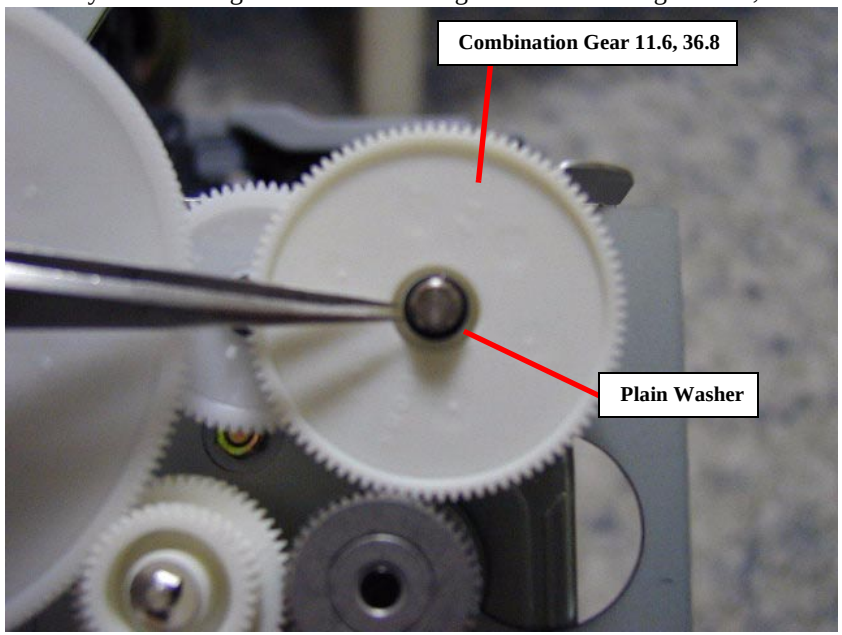



**Figure 4-47. Removing the combination gear 11.6, 36.8**

5. Rotate the bushing on the shaft of paper eject roller toward the top and release it.

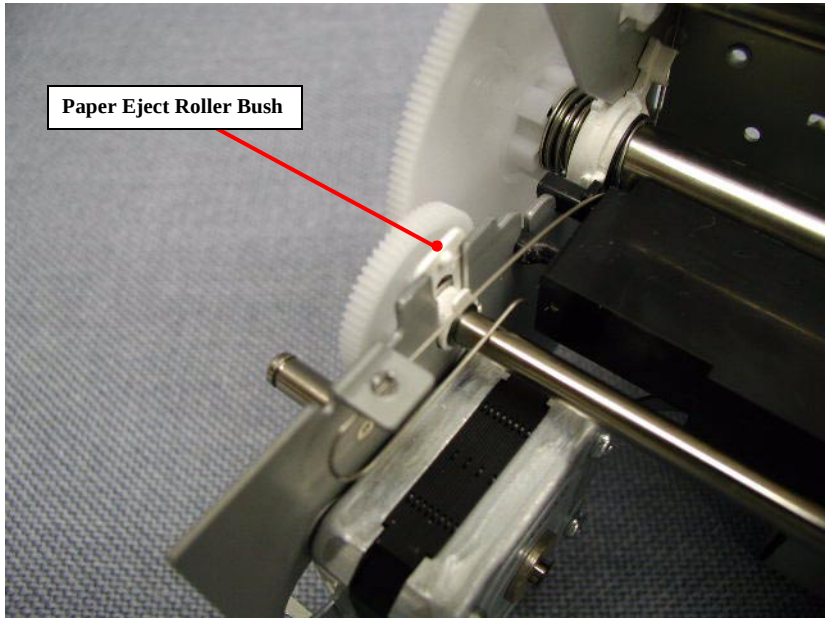



**Figure 4-48. Paper eject roller bush**

6. Move the paper eject roller to the left side, then take the paper eject roller out from the bushing on the right side and remove the paper eject roller from the left side bushing.

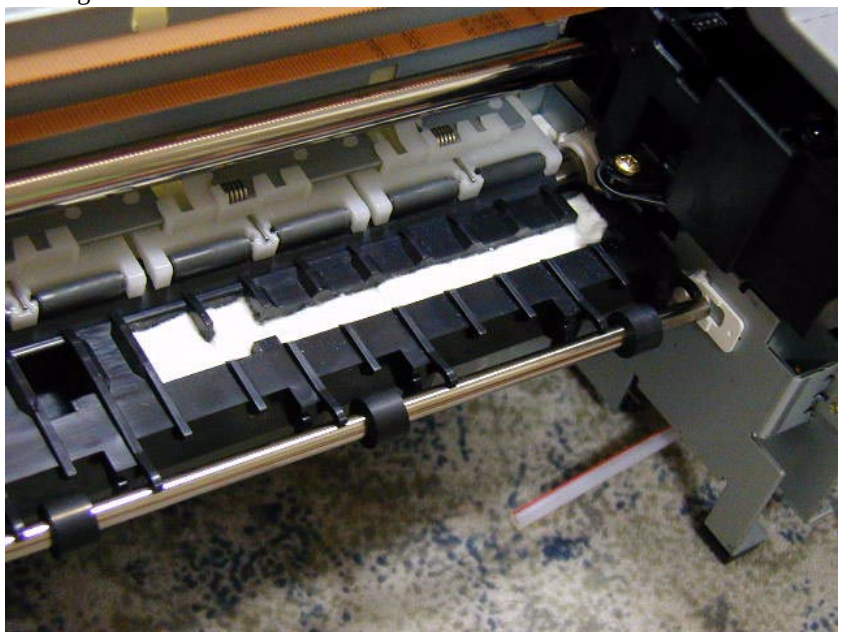


**Figure 4-49. Removal of Paper Eject Roller**

- **When you replace the Frame front, make sure to lubricate the specific amount of G26 to the Frame front. Refer to the Chapter 6 Refer to Figure 6-5. "Lubrication point 5".**
- **When you replace the Paper eject roller with new one, make sure to lubricate the specific amount of G26 to the Spur gear 25.6. Refer to the Chapter 6 Refer to Figure 6-7. "Lubrication point 7".**

- **When you assemble the Front frame to the Printer mechanism, set the CR unit to the left side and assemble the Front frame from the right side. Be careful not damage the CR lock lever.**
- **Fasten the Front frame with C.B.S Screw 3x6 F/ZN in the order of 1, 2, 3.**

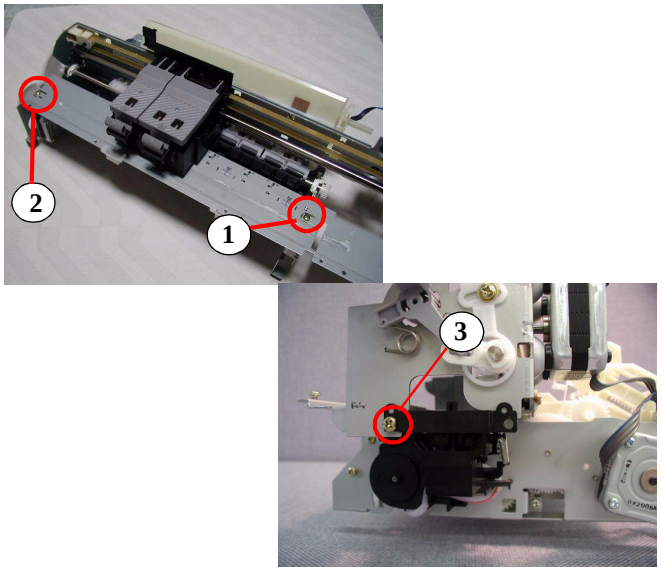



**Figure 4-50. Installing the Front Frame**

- **Tightening torque for screw**

• C.B.S 3x6 F/ZN screw for Front frame : 9+/-1 kgf.cm

## 4.2.14 PF motor removal

1. Remove the Housing from the printer. (Refer to Section 4.2.1 "Housing Removal")
2. Remove the Waste drain ink pad unit from the printer. (Refer to Section 4.2.6 "Waste drain ink pad unit removal")
3. Remove the printer mechanism from the printer (Refer to Section 4.2.7 "Printer mechanism removal").
4. Remove the Front frame and Paper eject roller. (Refer to Section 4.2.13 "Paper Eject Roller removal")
5. Remove the Plain washer and then remove the Combination gear 11.6, 36.8 carefully. Refer to Figure 4-51. "Removing the Plain washer and Combination gear 11.6, 36.8".

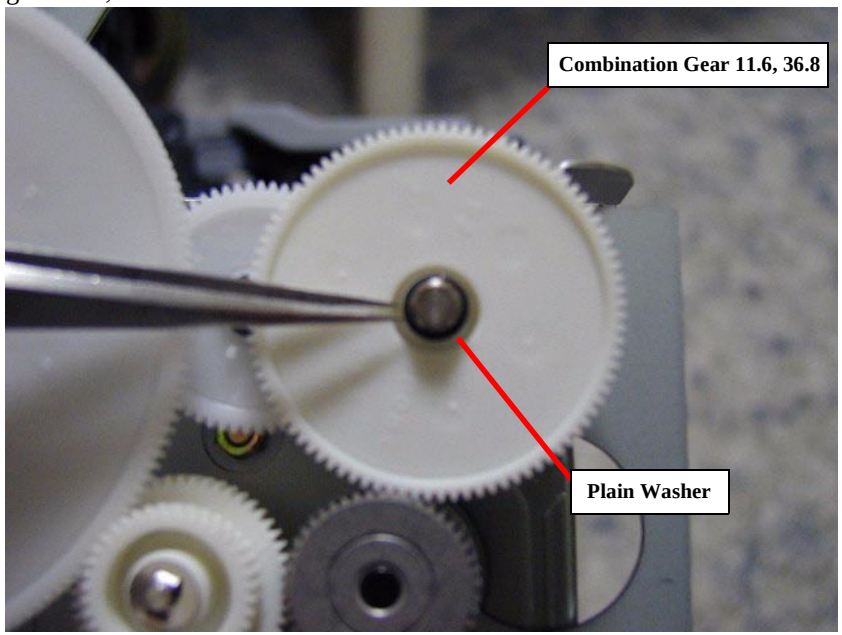



**Figure 4-51. Removing the Plain washer and Combination gear 11.6, 36.8**

6. Remove three nuts (Hexagon Nut M3) securing the PF motor to the left frame.

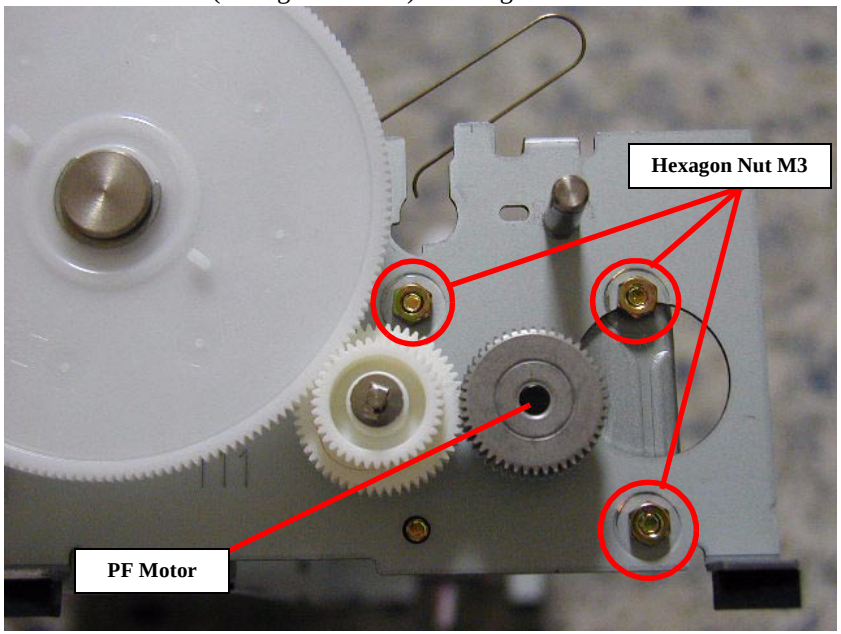



**Figure 4-52. Removing three screws securing the PF motor**

7. Disconnect the connector cable for PF motor from CN12 on the Main board.
8. Remove the PF motor from the left frame.

CHECK POINT

**Be sure that the PF motor cable is placed to the backward. Refer to the Figure 4-53. "PF motor cable"**

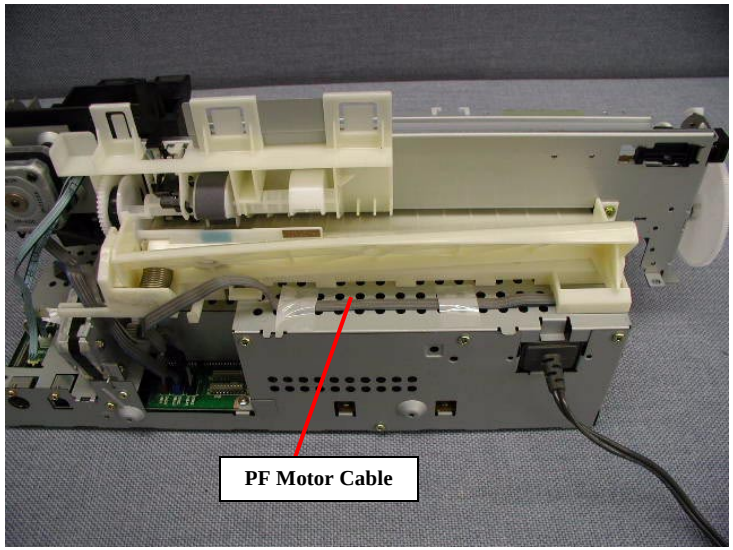



**Figure 4-53. PF motor cable**

REASSEMBLY

- **Since the CN 12 is located near the rear edge of the Main board. It is easier to use the tweezers or pincers to connect the cable to the CN12.**
- **Check that the connector cable of PF motor is securely connected to the CN12 on the Main board when installing PF motor.**
- **Tightening torque for screw**
  - Hexagon Nut M3 for PF motor : 6+/1 kgf.cm

## 4.2.15 CR unit removal

1. Remove the Housing from the printer. (Refer to Section 4.2.1 "Housing Removal")
2. Remove the CR timing belt from the CR pinion gear. (Refer to Section 4.2.5 "CR motor removal")
3. Release the Printhead FFC from the cable holders on the LD roller shaft holder. And disconnect the Printhead FFC from the connectors CN8 and CN9 on the Main board

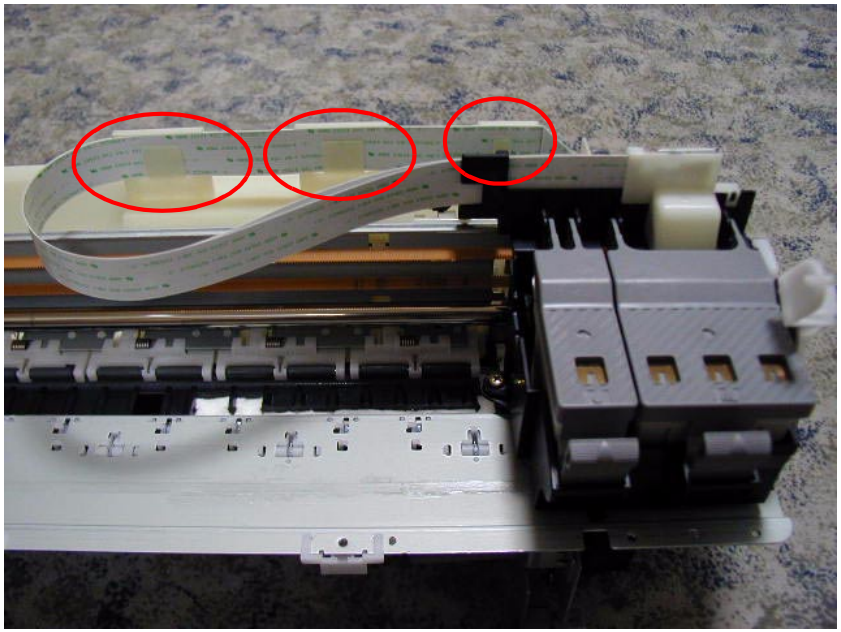


**Figure 4-54. Taking Printhead FFC off**

4. Remove the Lever, PG's hook from the installation hole in the right side of the frame, then remove the Lever, PG.

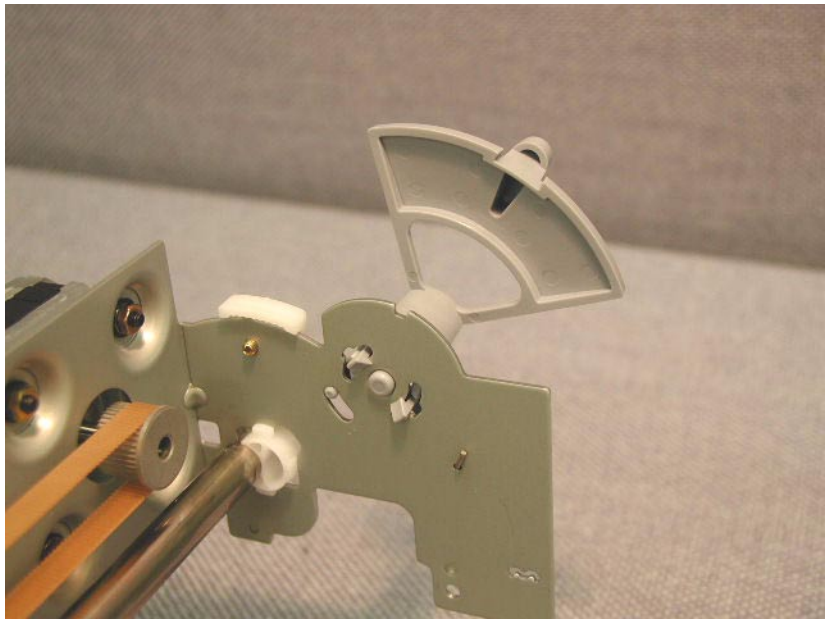


**Figure 4-55. Removal of lever and PG**

5. Remove the Lever, PG and torsion spring from the frame.

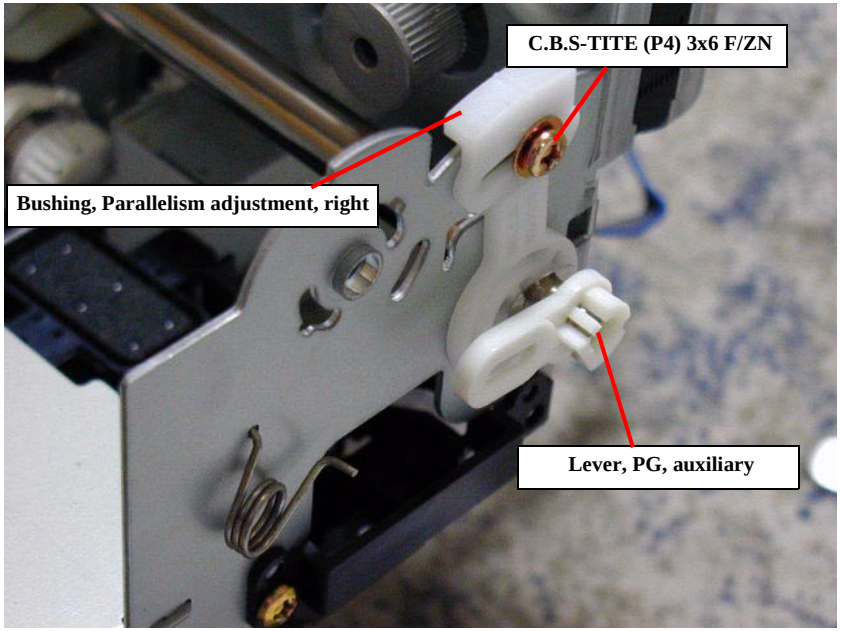



**Figure 4-56. Release Right Rod spring for CR shaft**

6. Remove the Lever, PG from the Lever, PG, auxiliary.
7. Disconnect the hook on the Lever, PG, auxiliary from the shaft, then remove the Lever, PG, auxiliary and disc spring.
8. Remove one screw (C.B.S-TITE (P4)Å@3x6 F/ZN) securing the Bushing, Parallelism adjustment, right.

REASSEMBLY

■ **Tightening torque for screw.**

- C.B.S-TITE (P4) 3x6 F/ZN screw for screw securing the Bushing, Parallelism adjustment, right: 7+/-1 kgf.cm

9. Turn the Bushing, parallelism adjustment, right, align it with the hole in the frame and remove it.

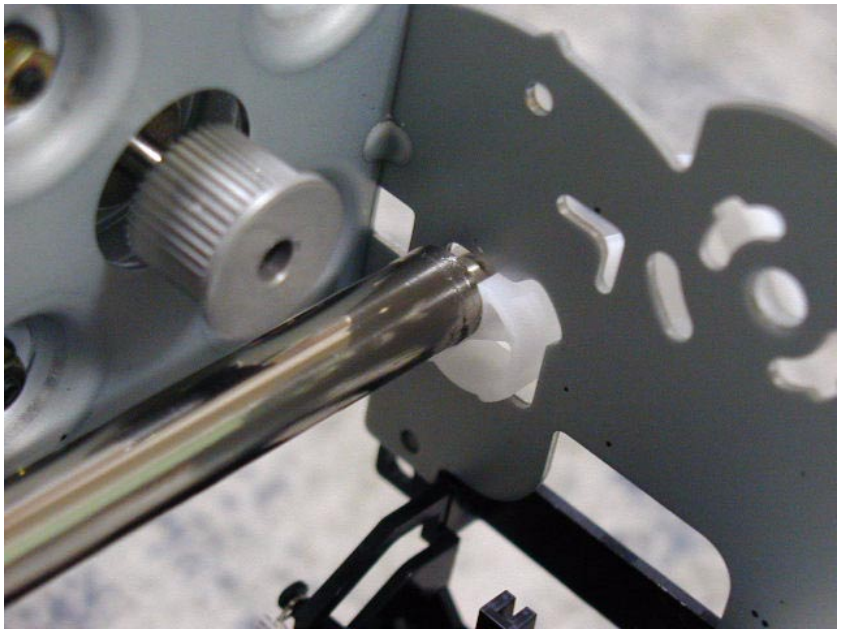


**Figure 4-57. Removing bush, parallel adjustment, right**

10. Remove the shaft, CR, guide, together with the carriage unit, from the frame.
11. Remove the shaft, CR, guide from the carriage unit.

CAUTION

**Remove the CR guide shaft while holding the CR unit by hand. If you remove the CR guide shaft without holding the CR unit, the nozzle surface of the Printhead may come in contact with the Paper guide front, which causes the dot missing problem.**

CHECK POINT

- Unlike the previous products, the oil pad is not built in the CR unit.
- If you disassemble the CR unit after removing the CR unit from the printer, make sure that the CR Grounding plate is assembled in the suitable position in the CR unit. Refer to Figure 4-58. "Grounding plate assembling position".
- Make sure that the CR slider is assembled on the CR unit.

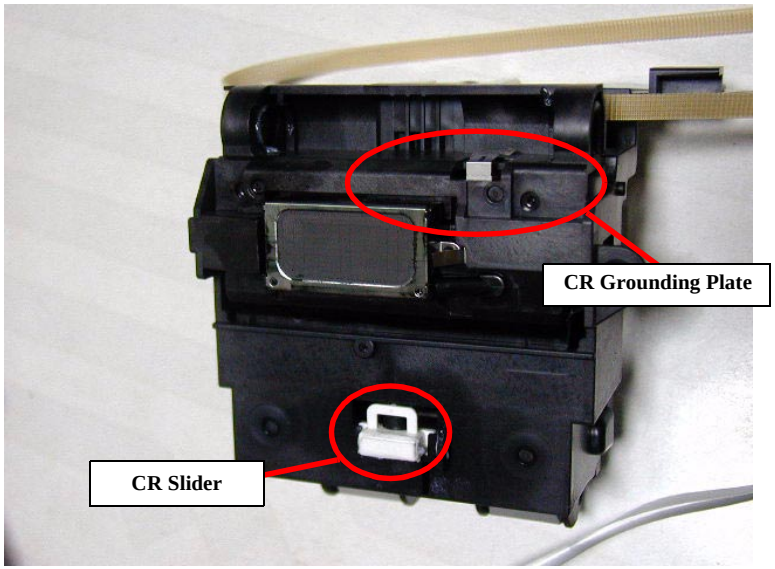



Figure 4-58. Grounding plate assembling position

- If you remove the Printhead from the CR unit, make sure that the Head grounding plate is set in the CR unit. Refer to Figure 4-16. "Printhead installing the position pin & the grounding plate".

CHECK POINT

- If the CR unit is disassembled or replaced with a new one, make sure that the CR timing belt is set in the assembling groove correctly as following figure.

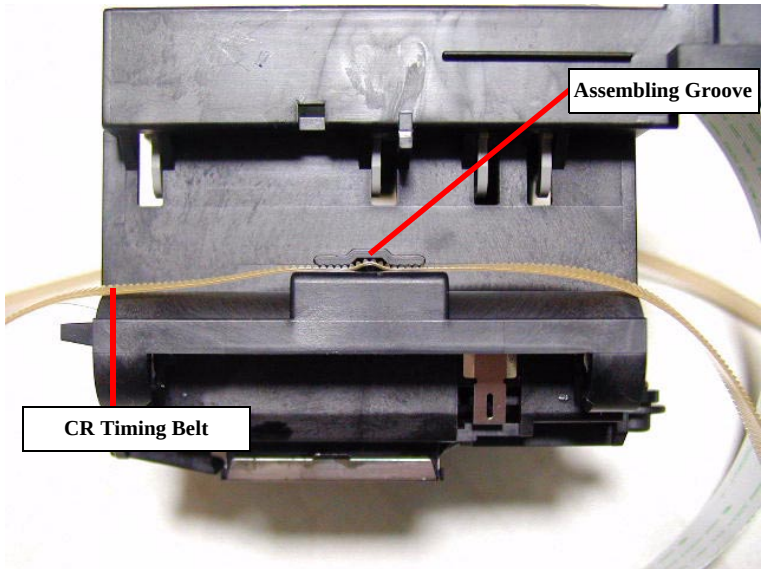



Figure 4-59. CR timing belt setting position

ADJUSTMENT REQUIRED

- When you replace the CR unit with a new one, lubricate it with the suitable amount of the G-56 grease by the specified position. Refer to Chapter 6 Figure 6-1. "Lubrication point 1".
- When you replace the CR Pulley shaft with new one, lubricate it with the suitable amount of G-26 grease by the specific position. Refer to Chapter 6 Refer to Figure 6-3. "Lubrication point 3".
- When removing or replacing the CR unit with a new one, adjust the Gap (Bi-d).

## 4.2.16 Paper feed roller removal

1. Remove the Housing from the printer. (Refer to Section 4.2.1 "Housing Removal")
2. Remove the panel unit from the printer. (Refer to Section 4.2.2 "Operation Panel removal")
3. Detach the housing lower cover from the printer. (Refer to Section 4.2.3 "Housing Lower Cover Removal")
4. Remove the Paper Eject roller. (Refer to Section 4.2.13 "Paper Eject Roller removal")
5. Remove the CR unit. (Refer to Section 4.2.15 "CR unit removal")
6. Release the PF grounding spring from the Main frame

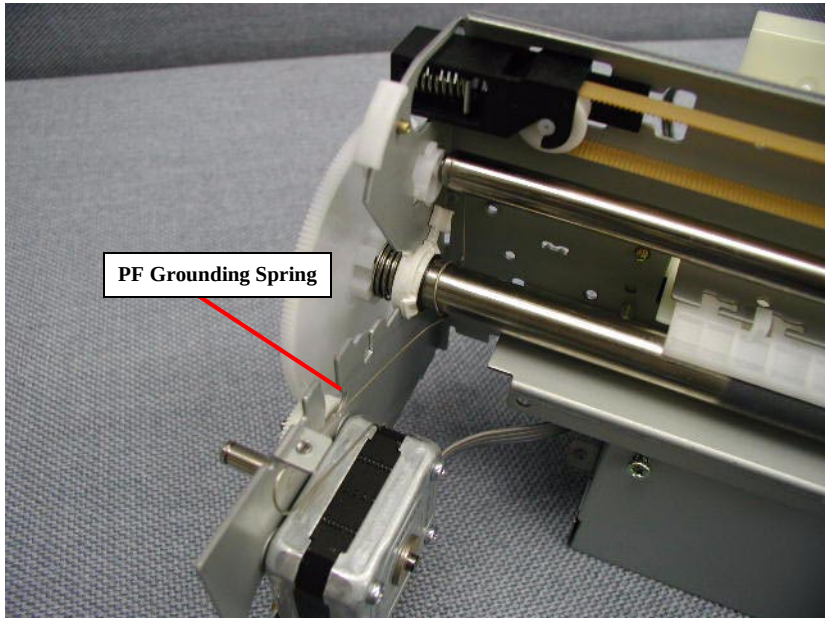



**Figure 4-60. Releasing the PF grounding spring**

7. Release one hook located on the right edge of the Front paper guide.

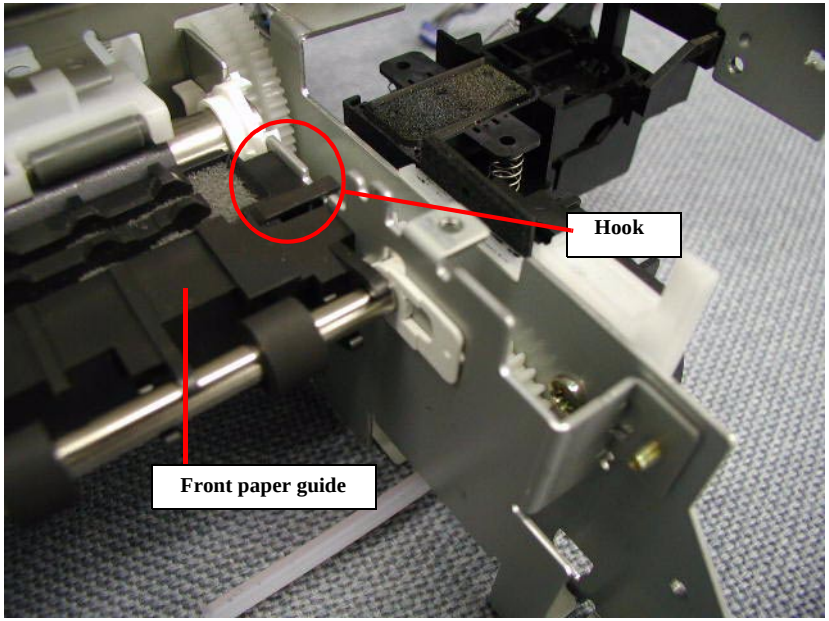



**Figure 4-61. Release one hook of the Front paper guide**

8. Lift up the left edge of the Front paper guide while slanting the Front paper guide by pulling up its front edge, and then slide the Front paper guide to the left side after releasing the right hook on the Front paper guide

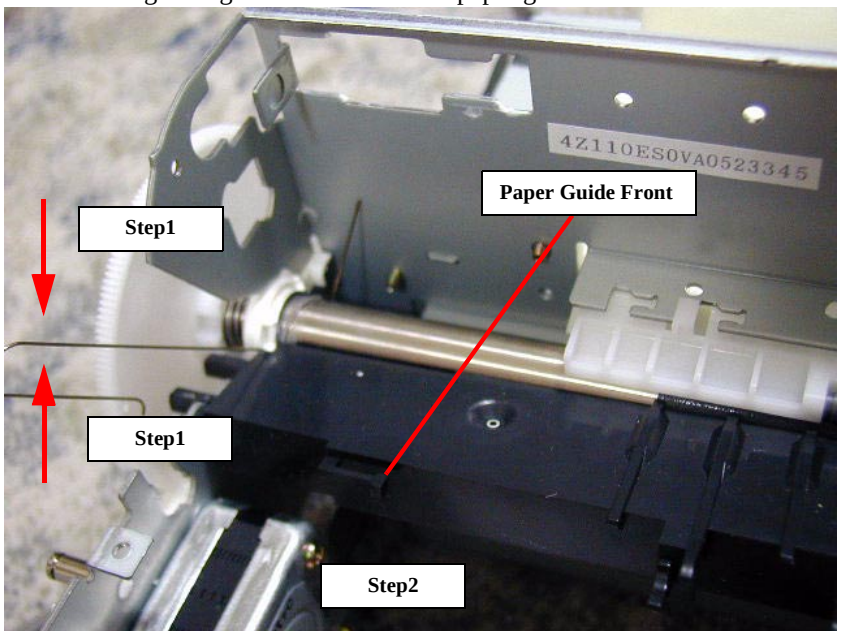



**Figure 4-62. Remove the Front paper guide**

9. Fit the protrusions of the Left PF roller bushing to the notches in the frames as shown in the following figure and remove the PF roller fasten spacer with tweezer

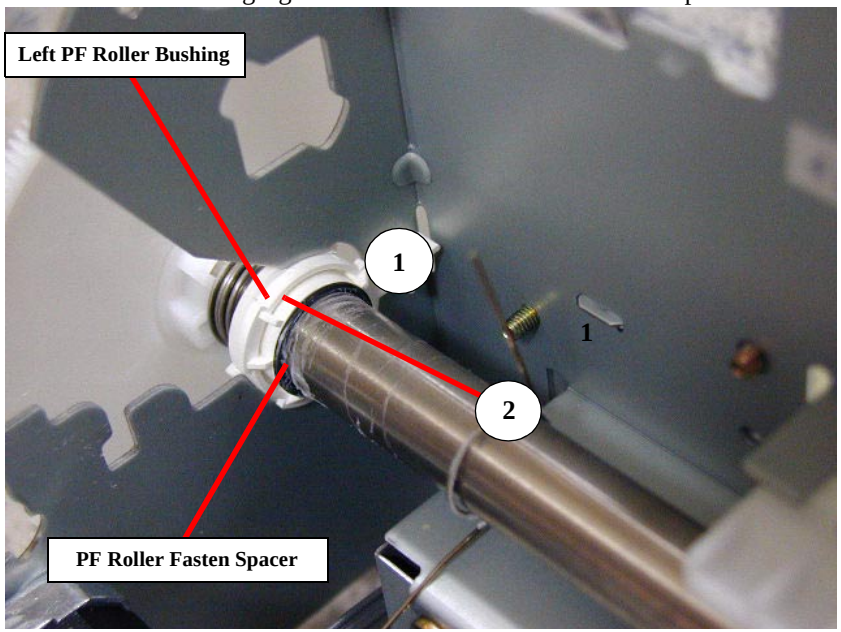



**Figure 4-63.**
**Fit the protrusions of the Left PF roller bushing to each notches**

10. As shown in Step 2 in the above figure, slide the left roller bushing to the right side.

11. Fit the protrusions of the Right PF roller bushing to the notches in the frames as shown in the following figure.

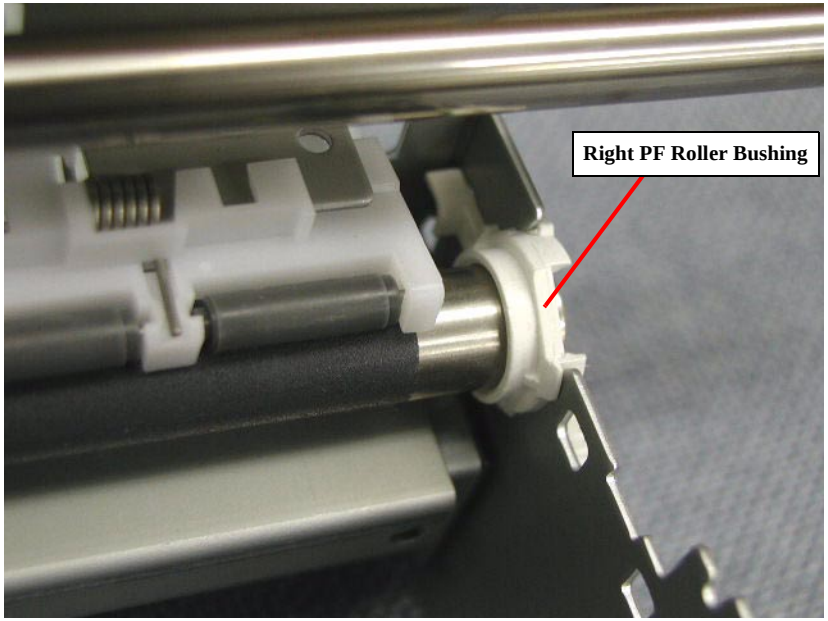



**Figure 4-64.**
**Fit the protrusions of the Left PF roller bushing to each notches**

12. Slide the PF roller to the left side along with the both PF roller bushings and remove the PF roller from the printer mechanism.

CHECK POINT

- **After assemble the PF roller, make sure that the dowel of the both left and right PF roller bushing holder fit in the cut hole of both frames.**
- **After assemble the Front paper guide to the printer mechanism, make sure that the hooks and the dowel pins on the Front paper guide is set to the fitting positions secure. Slide the Front paper guide to the right side by pushing it and make sure that the right hook on the Front paper guide is locked to the frame securely. If the Front paper guide is not fixed securely to the suitable position, it may cause the paper jam problem.**

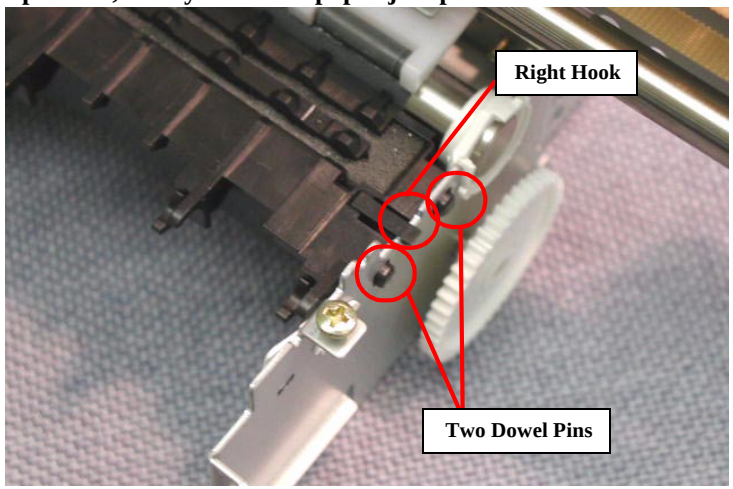



**Figure 4-65. Front paper guide assembling notice**

ADJUSTMENT REQUIRED

- **When you replace the PF roller with new one, be sure to lubricate a specific amount of G-26 between the Left PF roller bushing holder and the left edge of the PF roller. Refer to Chapter 6 Refer to Figure 6-2. "Lubrication point 2".**

REASSEMBLY

- **When you assemble the Front frame to the Printer mechanism, set the CR unit to the left side and assemble the Front frame from the right side. Be careful not damage the CR lock lever.**

## 4.2.17 Disassembling ASF frame unit

1. Remove the Housing from the printer. (Refer to Section 4.2.1 "Housing Removal")
2. Remove the LD roller shaft holder unit (Refer to Section 4.2.9 "LD Roller removal")
3. Remove two screws (C.B.S.-TITE (P4) 3x8, F/ZN screw, C.B.S-TITE (P4) 3x6 F/ZN) securing the ASF frame unit and remove the ASF frame unit from the printer mechanism

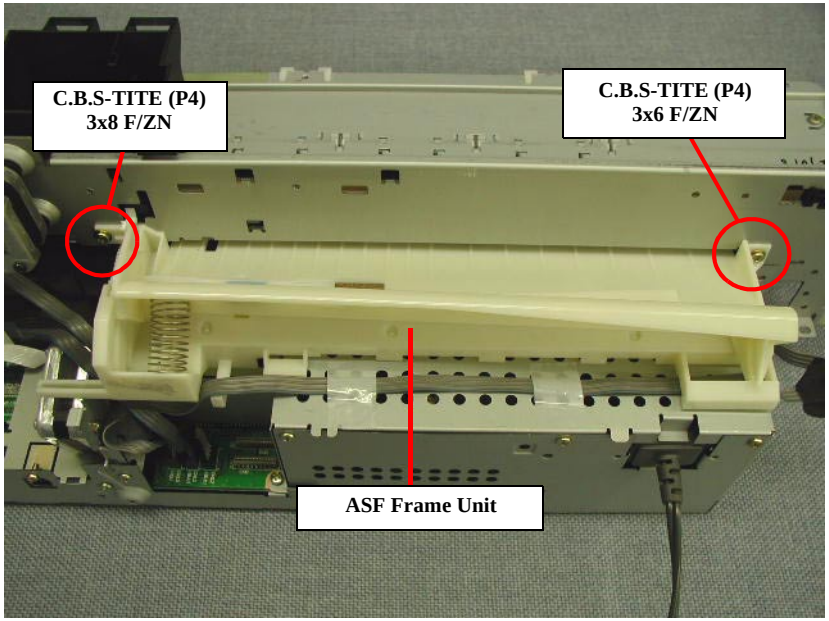



**Figure 4-66. Removing the screws securing the ASF frame**

4. Remove the Spur gear 23.2 from the ASF frame.

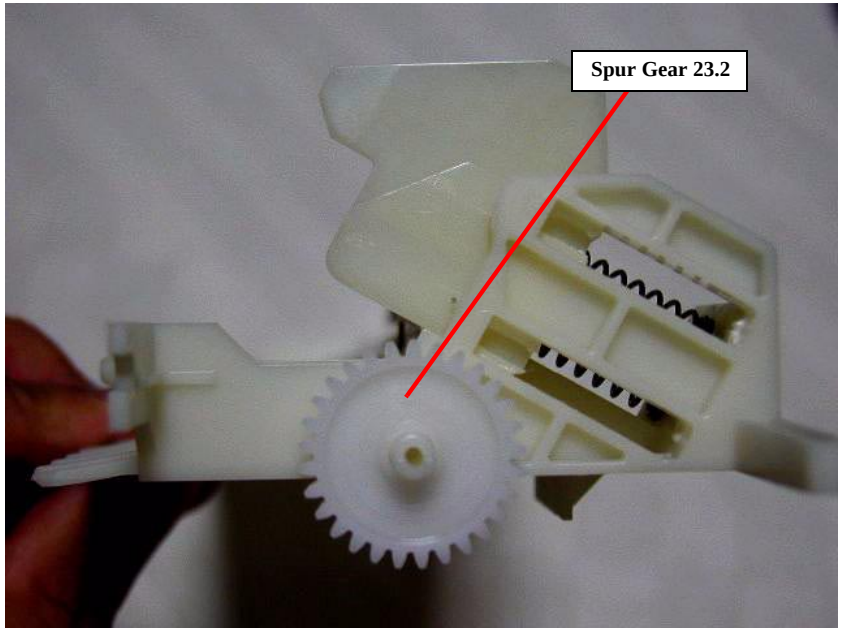
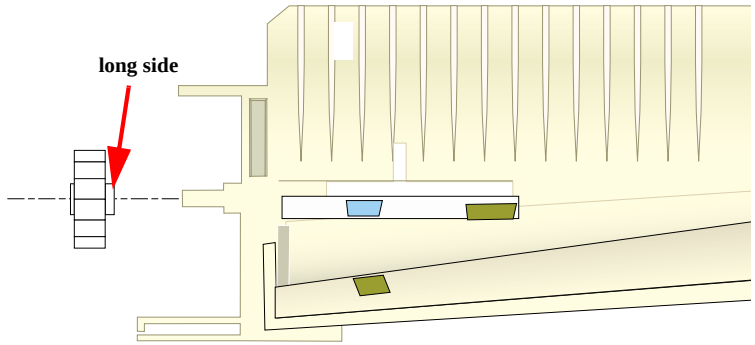



**Figure 4-67. Removing the Gears from ASF frame unit**

ADJUSTMENT REQUIRED

**Assemble the Spur Gear 23.2 to the ASF Frame Unit, as the following figure.**



5. Remove the Compression Spring 2.67 located between the ASF Frame and the Hopper, and remove the Hopper from the ASF frame.

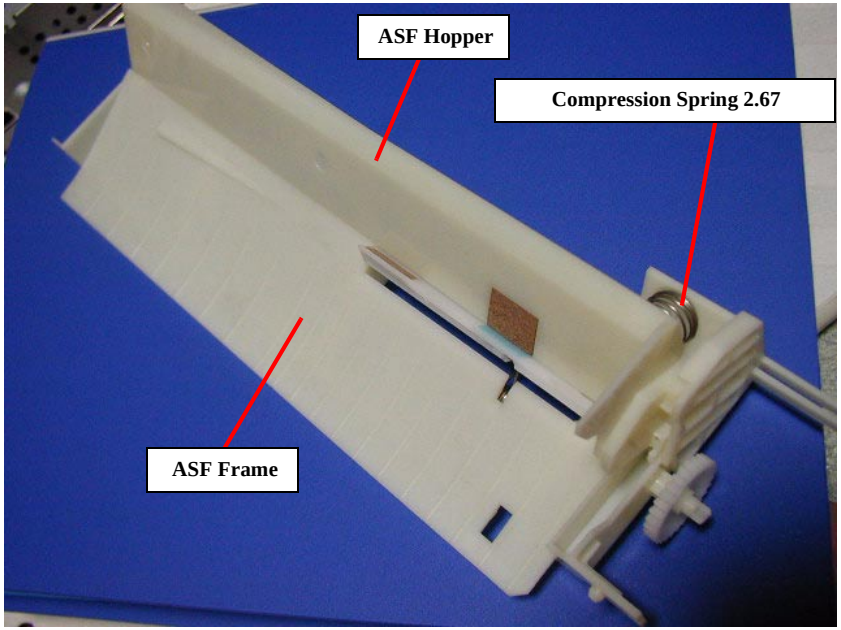



**Figure 4-68. Removing the Compression spring 2.67**

6. Remove the Torsion spring 25.7 from the bottom of the ASF frame and the Pad holder (Paper return plate)

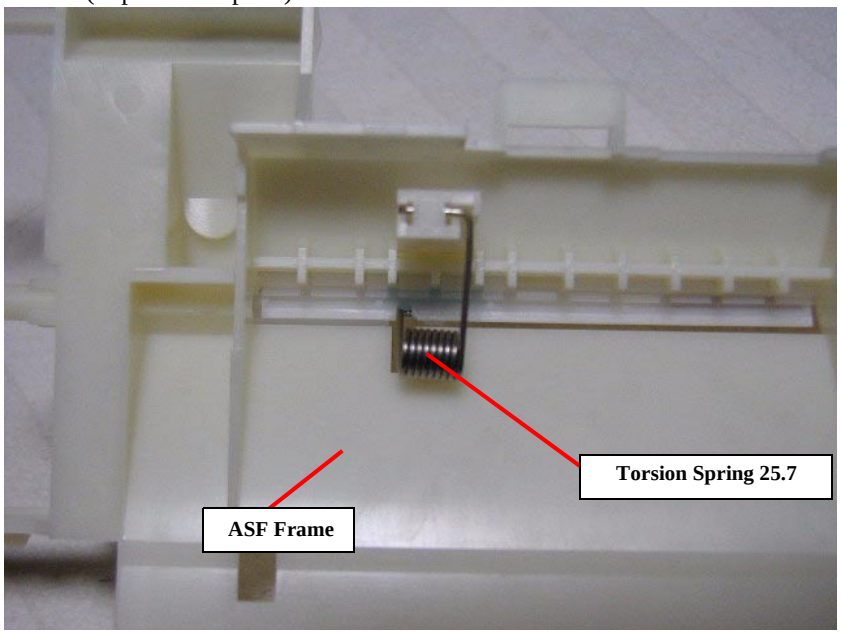



**Figure 4-69. Removing the Torsion spring 25.7**

7. Remove the Pad holder (Paper return plate) from the ASF frame

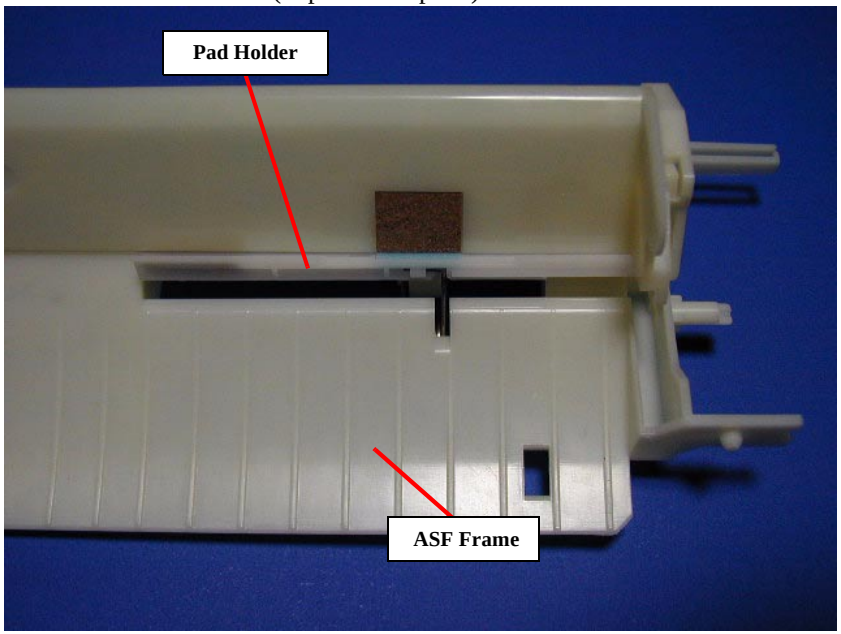



**Figure 4-70. Removing the Pad holder (Paper return plate)**

CHECK POINT

- **Make sure that the each tip of the Torsion spring 25.7 is set in the slot of the Pad holder and ASF frame. Refer to Figure 4-69. "Removing the Torsion spring 25.7".**
- **Make sure that the Pad holder moves smoothly after assembling it to the ASF frame.**

REASSEMBLY

- **When you replace the ASF frame or Hopper with the new one, make sure to lubricate the specific amount of G26 into the groove on ASF frame. Refer to Figure 6-6. "Lubrication point 6" and Figure 6-4. "Lubrication point 4" in the Chapter 6.**
- **Fasten the ASF unit C.B.S-TITE (P4) 3x8 F/ZN screw (left screw in the following figure), C.B.S-TITE (P4) 3x6 F/ZN screw (right screw in the following figure) in the order of following figure.**

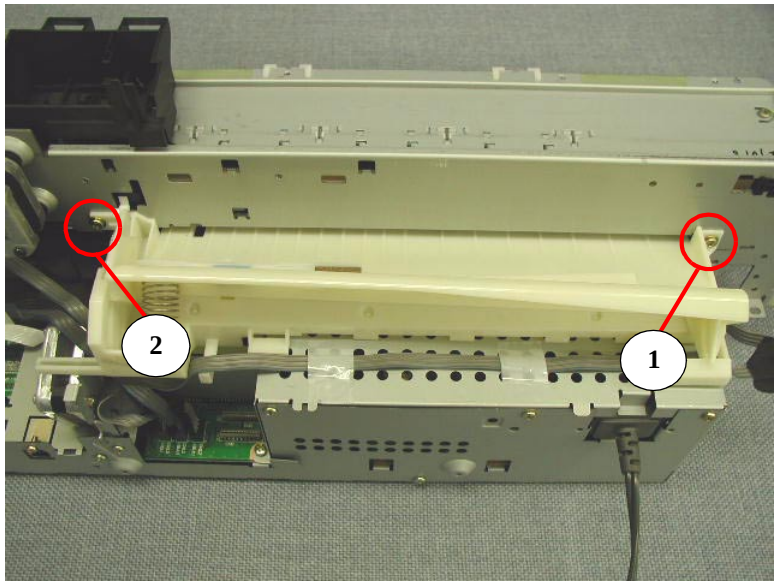



**Figure 4-71. ASF fixing screws fastening order**

- **Tightening torque for screw**
  - C.B.S-TITE (P4) 3x6 F/ZN screw for ASF (right screw in above figure) : 9+/-1 kgf.cm
  - C.B.S-TITE(P4) 3x8 F/ZN screw for ASF (left screw in above figure) : 9+/-1kgf.cm

## 4.3 Preview monitor disassembly procedure

This section indicates a disassembling procedure of optional preview monitor.

### 4.3.1 Back case removal

1. Remove the tilt screws and then tilt stand.

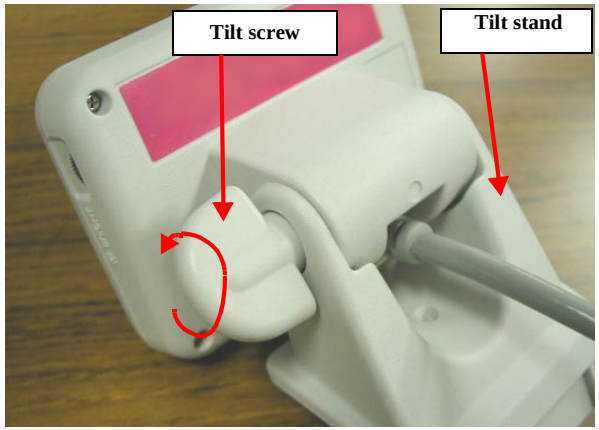



**Figure 4-72. Tilt base removal**

2. Remove two screws securing the monitor cable cover and detach the monitor cable cover.

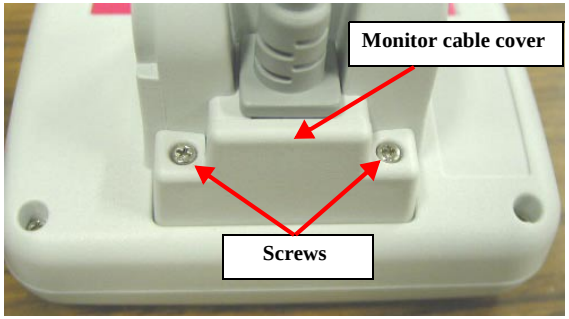



**Figure 4-73. Monitor cable cover removal**

3. Remove the monitor cable from the hook on the rear case.

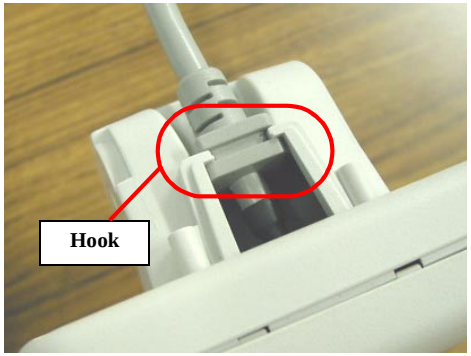



**Figure 4-74. Monitor cable hook removal**

4. Remove four screws securing the back case.

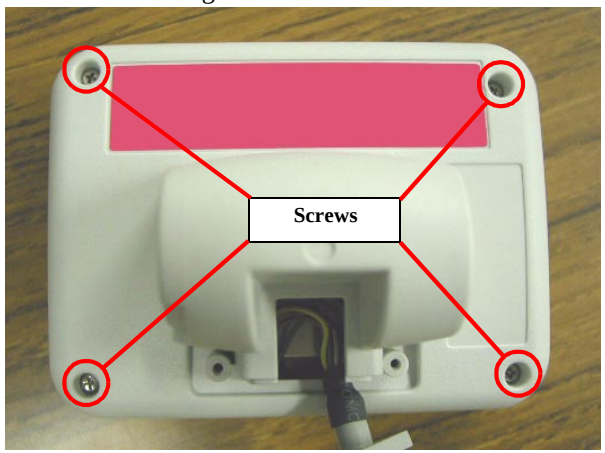



**Figure 4-75. Removal of the back case attaching screws**

5. Open the back case, remove the monitor cable connector and then detach the back case.

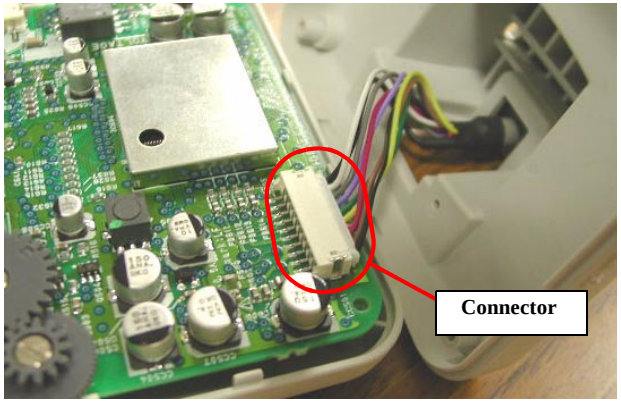



**Figure 4-76. Removal of the monitor cable connector**

## 4.3.2 Removal of the control board unit

1. Remove the back case. (Refer to 4.3.1)
2. Remove one screw securing the control board unit.

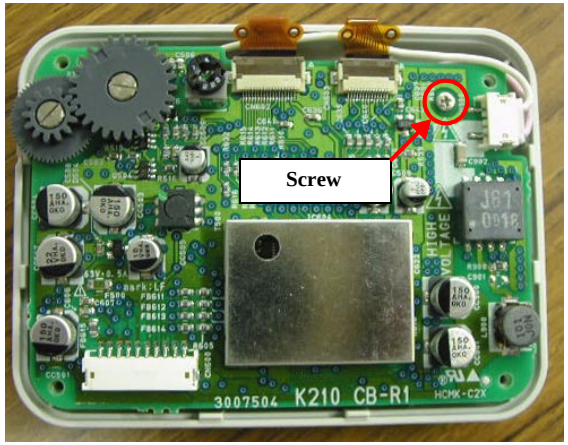



**Figure 4-77. Removal of the control board unit attaching screw.**

3. Remove three connectors attached to the control board unit.

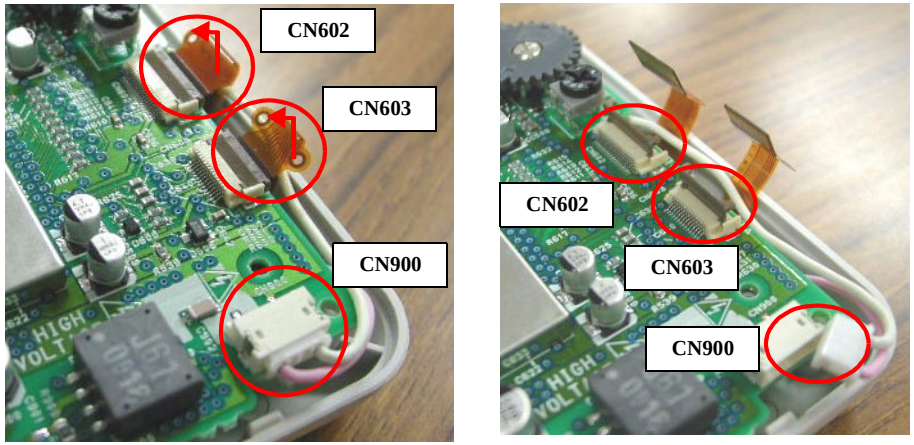



**Figure 4-78. Connectors removal**

4. Remove the control board unit.

CHECK POINT

- **CN602 and CN603 are open/close type connectors.**

ADJUSTMENT REQUIRED

**When the control board unit is replaced, adjust as follows.**

- **Brightness adjustment**
- **Image pattern inspection**

## 4.3.3 Panel unit removal

1. Detach the back case (Refer to 4.3.1.)
2. Remove the control board unit. (Refer to 4.3.2)
3. Remove two screws securing the panel assembly and then remove the panel assembly.

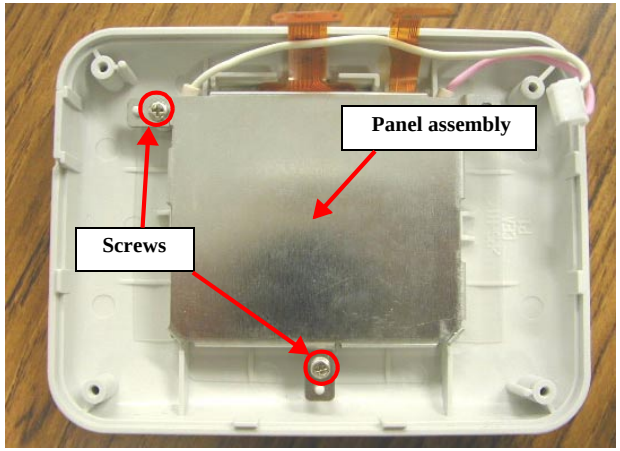



**Figure 4-79. Panel assembly removal**

4. Remove the hook from shield board and detach the shield plate and panel unit.

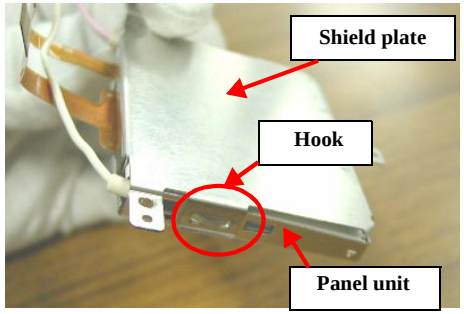



**Figure 4-80. Panel unit removal**

**When the panel unit is replaced, make sure to adjust as follows:**

- **Brightness adjustment**
- **Image pattern inspection**

CHAPTER

# 5

# ADJUSTMENT

Download Free Service Manual and Resetter Printer at http://printer1.blogspot.com

# 5.1 Outline

This section provides explanations on the adjustments required after dismantling and reassembling this product.

## 5.1.1 Adjustment items

The items for adjustment are listed below. Ensure that all instructions related to these adjustment items are implemented without fail to ensure trouble-free operations of this product when performing the adjustments described below.

**Table 5-1. Adjustment items**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| **Service item** | **Parallel adjustments** | **EEPROM initial setting** | **Head ID input** | **Ink Change** | **Bi-D Adjustment** | **USB ID input** | **Memory card drive confirmation** | **Protection Counter reset** |
| Printhead removal | NA | NA | NA | NA | ① | NA | NA | NA |
| Printhead replacement | NA | NA | ① | ② | ③ | NA | NA | NA |
| Main board replacement | NA | ① | ② | NA | ③ | ④ | ⑤ | NA |
| CR Unit replacement or removal | ① | NA | NA | NA | ② | NA | NA | NA |
| CR Motor replacement | NA | NA | NA | NA | ① | NA | NA | NA |
| Printer mechanism replacement | NA | NA | ① | ② | ③ | NA | NA | NA |
| Waste Ink pad replacement | NA | NA | NA | NA | NA | NA | NA | ① |

***NOTE:*** *The circle (O) indicated that adjustments must be carried out. The numbers inside the circles indicate the adjustment sequence.*

***NOTE:*** *The following adjustment procedure is not required with this product.*
*• Head leaning adjustments*

This section explains the detailed procedures for adjustment programs.

In order to ensure stable printing functions and maintain quality between each printer mechanism, it is necessary to set up the adjustment information for each mechanism.

It is therefore necessary to set up and save the correct mechanism information with the use of the adjustment program when the printer mechanisms, the main circuit board, and the printer head have been replaced.

**Make sure the power supply to the printer has been switched off when removing parts or assembling parts during adjustment program execution.**

## 5.2 Parallel adjustor

As it is necessary to temporarily remove the bushes and parallel adjustor when disconnecting or replacing the carriage unit, parallel adjustments are required. Parallel adjustments include the parallel adjustment of the axes, the CR, the guide and the surface of the paper, and the PG adjustments (platen gap) that set the gap between the platen head and the platen surface to a fixed distance.

CAUTION

- **Do not scratch of otherwise damage the specially coated surfaces of the roller and PF unit, the paper guide, or the surface of the front rib.**
- **Clean the gap gauge with a cloth moistened with alcohol prior to performing the parallel adjustment procedures.**
- **Do not scratch or otherwise damage the surface of the printer head, or leave it soiled (do not used dirty gap gauges.) Also, make sure the gap gauge does not come into contact with the surface of the head.)**
- **Ensure that parallel adjustments are performed with the in cartridge mounted in place.**

1. Ensure that the mark on the bush is aligned with the protruding part of the frame when attaching the left and right bush and parallel adjustor to the printer's mechanism frame.

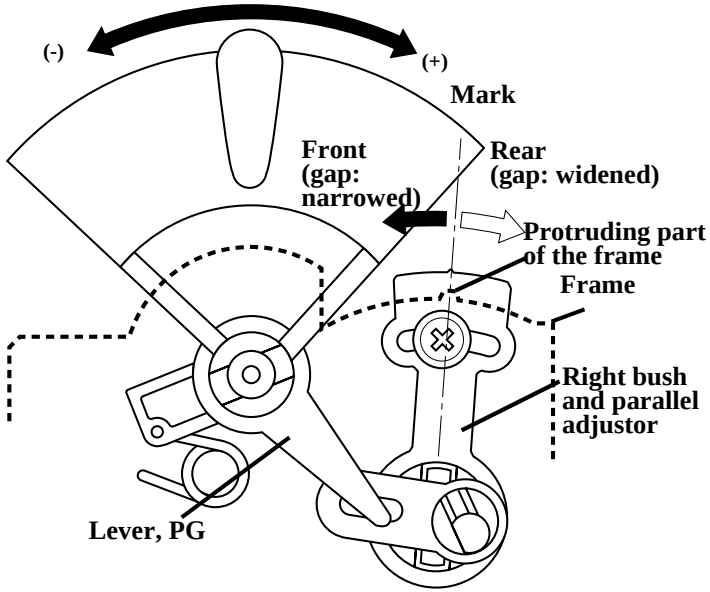
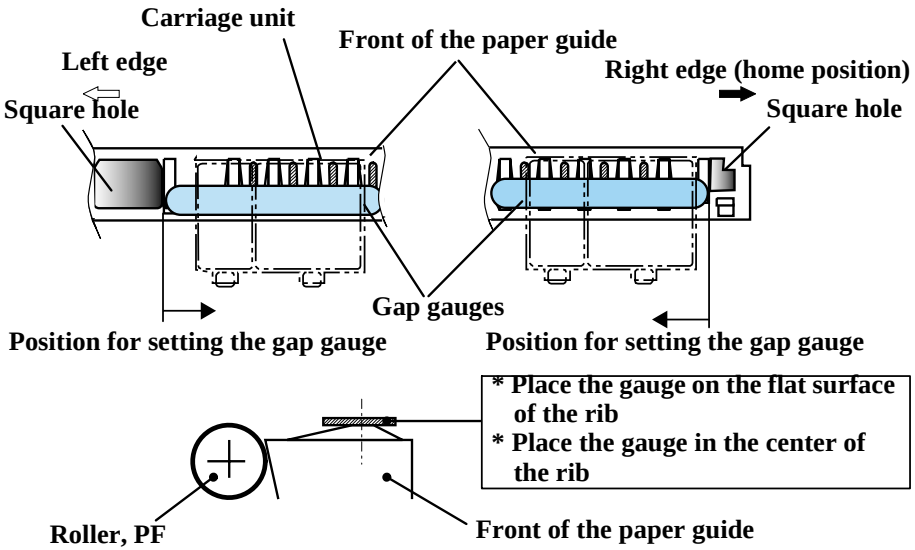



**Figure 5-1. Initial position of the bush and parallel adjustor**

2. Set the lever and PG to the (-) position at the front.
3. If the carriage unit is locked, use a pair of pincers to press down on the lock lever and release it.

4. Temporarily move the carriage to the center of the printer, and the place gap gauges with a thickness of 1.14mm into the left and right paper guides and the square hole at the front, as shown in the illustration below.


Carriage unit
Front of the paper guide
Left edge
Right edge (home position)
Square hole
Square hole
Gap gauges
Position for setting the gap gauge
Position for setting the gap gauge
* Place the gauge on the flat surface of the rib
* Place the gauge in the center of the rib
Roller, PF
Front of the paper guide

adj02

Figure 3-2. Position for attaching the gap gauges

CAUTION

■ **Pull the timing belt by hand to move the carriage unit.**

5. Set the lever and PG at the (+) position at the rear.
6. Move the carriage unit to a position where it covers the gauge on the right-hand side.
7. Set the lever and PG at the (-) position at the front.
8. Rotate the right-hand bush and parallel adjuster towards you, and set them so that they are one cog tooth towards the rear (in the direction where the PG is widened) from the position where contact is made with the printer head. If the head and gauge come into contact from the beginning, rotate the bush to the rear until contact is broken, and set them at the position where the bush meshes with the protruding part of the frame.
9. Set the lever and PG at the (+) position at the rear.
10. Move the carriage unit to a position where it covers the gauge on the left-hand side.
11. Set the lever and PG at the (-) position at the front.
12. Rotate the left-hand bush and parallel adjuster towards you, and set them so that they are one cog tooth towards the rear (in the direction where the PG is widened) from the position where contact is made with the printer head. If the head and gauge come into contact from the beginning, rotate the bush to the rear until contact is broken, and set them at the position where the bush meshes with the protruding part of the frame.
13. Set the lever and PG at the (+) position at the rear.
14. Move the carriage unit to a position where it covers the gauge on the right-hand side.
15. Set the lever and PG at the (-) position at the front.
16. Perform parallel adjustment once again on the right edge, and if all is okay, the procedure is complete.
17. Fix the left and right bush and parallel adjustor in place with the screws

## 5.3 Adjustments with the service program

The service program operates on Windows programs on the Windows 98 platforms.

CAUTION

- **This program is specially designed for use on the Windows 98 platforms. It will not run on DOS, Windows 3.x, or NT.**
- **This program runs only on USB I/F.**

### 5.3.1 Outline

This program is executes individually for each item to be adjusted. It includes the following adjustment and maintenance items.

**Table 5-2. Individual adjustment service program**

| No. | Main Menu | Service |
|---|---|---|
| 1 | Adjustment | EEPROM initial setting |
| | | Head ID input |
| | | Bi-D adjustment |
| | | USB ID input |
| | | Memory card drive confirmation |
| 2 | Maintenance items | Head cleaning |
| | | Initial ink charge |
| | | Refurbishment for DOA |
| | | Protection counter check / reset |
| 3 | Check pattern printing | A4 check pattern print |
| 4 | Appendix | CSIC information |
| | | EEPROM check / Write |

### 5.3.2 Starting up the service program

1. The following screen will be displayed when the service program is started up.

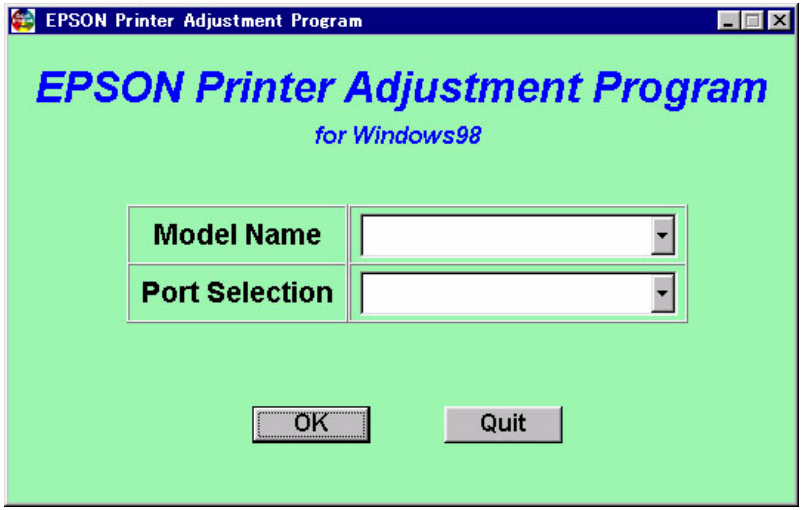



**Figure 5-3. Program initial screen**

2. Select the model name.
3. Select the number of the port to which the Stylus PHOTO 895/785EPX is connected to the computer.

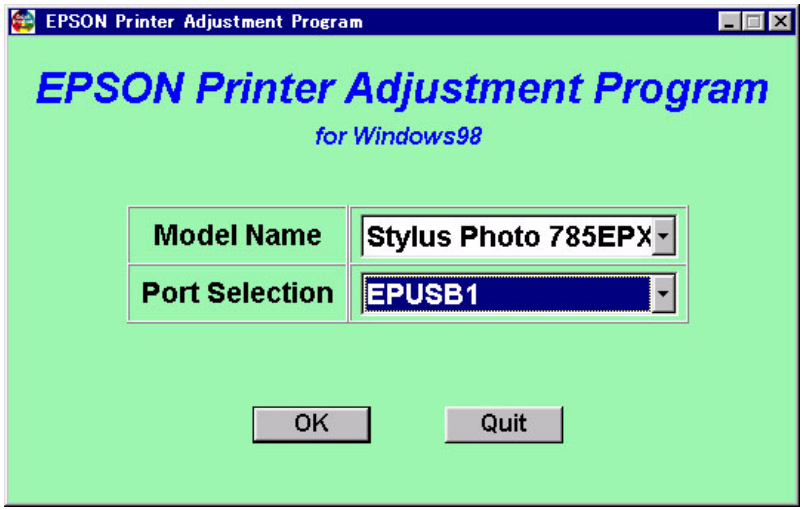



**Figure 5-4. Model and port selection**

4. Click on the [OK] button. Main menu will be displayed.

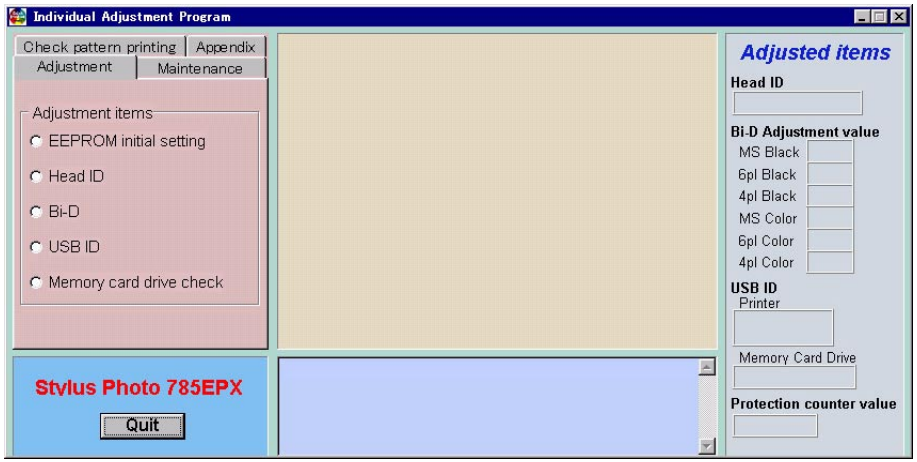



**Figure 5-5. Maine menu**

CAUTION

- **Do not start up the adjustment program before connecting the USB cable to the printer.**
- **Be sure to restart the adjustment program if the printer power is turned off or the USB cable is disconnected during the adjustment program execution.**

This adjustment service program includes the following buttons.

☐ End

Click on the [Quit] button to display the menu shown below. Adjustments will be completed and the program ended when the [Quit] button is clicked. The screen will return to the model selection screen when the [Next] button is clicked.

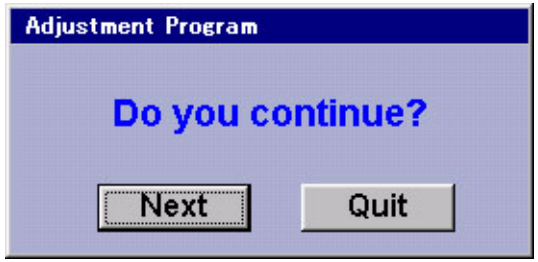



**Figure 5-6. Termination**

## 5.3.3 EEPROM initial setting

It is required to write the initial setting values into EEPROM when the Main board is replaced.

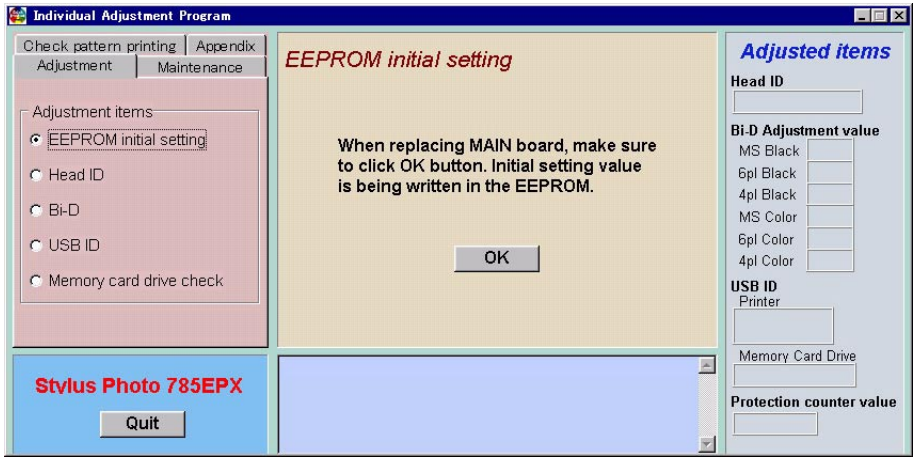



**Figure 5-7. EEPROM Initial Setting**

Click on the [OK] button to write the initial setting values into EEPROM.

## 5.3.4 Head ID

This adjustment writes the ID numbers for the Printhead into the EEPROM, and enables the current settings to be confirmed.

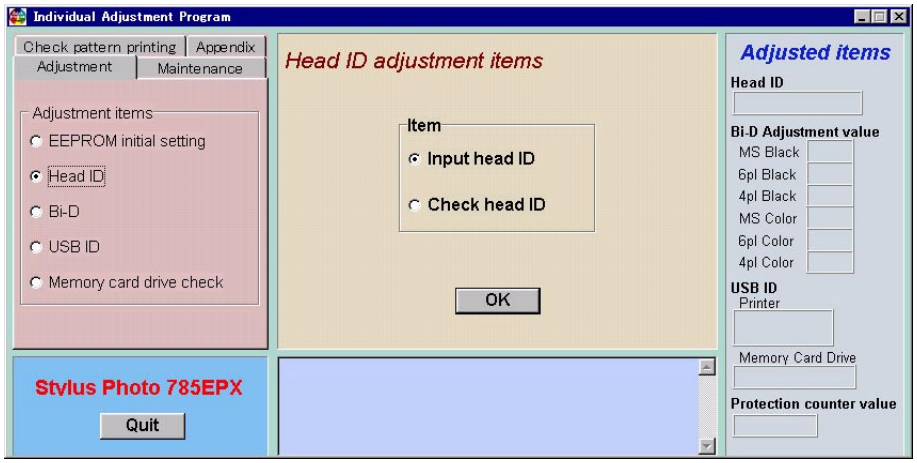



**Figure 5-8. Head ID adjustment items**

Click on the item to be adjusted, and then click on the [OK] button. If [Check head ID] has been selected, the value will be displayed in the center of the screen at the bottom. If [Input Head ID] has been selected, the following screen will be displayed to enable the head ID to be entered.

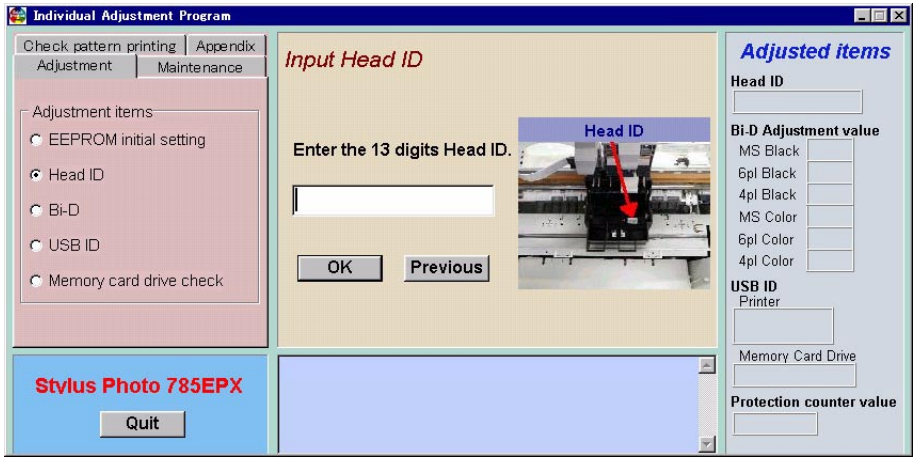



**Figure 5-9. Input head ID**

Check the 13-character ID written on each of the print heads, and enter the ID for the head that has been replaced. Click on the [OK] button when the ID has been entered. Click on the [Previous] button to return to the previous screen.

## 5.3.5 Bi-D

This adjustment prints out a pattern and makes the necessary adjustments to ensure that the pattern is printed correctly. The adjustment is implemented in a print Æ confirm Æ adjust Æ print Æ confirm sequence. It is also possible to check the current settings with this function.

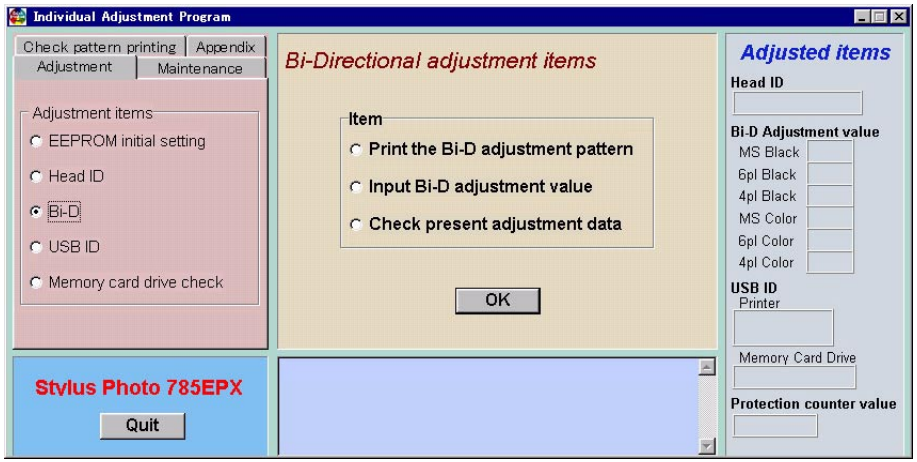



**Figure 5-10. Bi-Directional adjustment items**

Click on the item to be adjusted, and then click on the [OK] button. If [Print the Bi-D adjustment pattern] has been selected, a pattern will be printer. If [Check present adjustment value] has been selected, the value will be displayed in the center of the screen at the bottom. If [Input Bi-D adjustment value] has been selected, a screen to enable the adjustment value to be entered will be displayed.

Adjustments are required if the result of the printed Bi-D adjustment pattern looks like the examples shown below.
The lines are not straight:

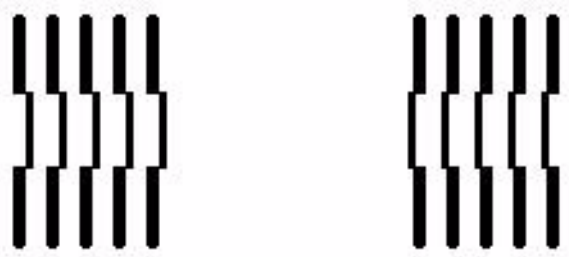


**Figure 5-11. Bi-D adjustment pattern**

If adjustments are necessary, click on the [Previous] button to return to the previous screen, select [Input Bi-D adjustment value] and enter the required adjustment value.

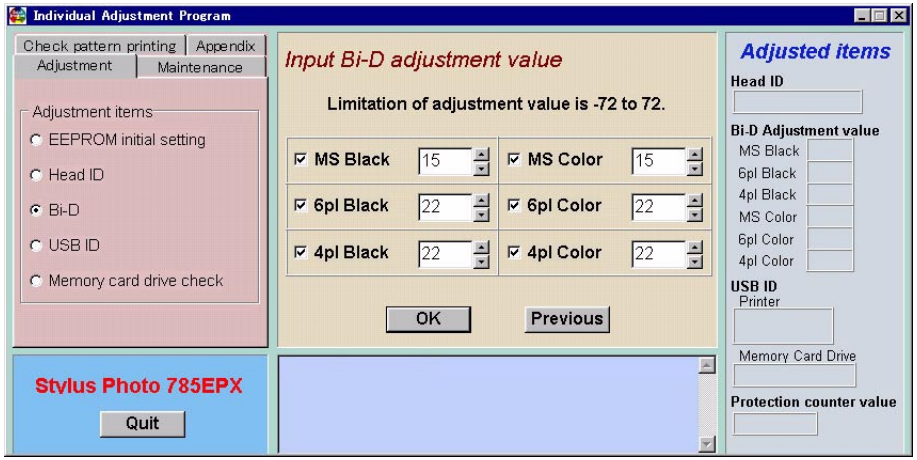



**Figure 5-12. Input Bi-D adjustment value**

The adjustment value can be entered for all modes. Add a tick to the items that require adjustment, and then enter the necessary values.

## 5.3.6 USB ID

The Stylus PHOTO 895/785EPX is equipped with a USB interface as a standard procedure. As the USB port driver controls devices that possess USB IDs on the Windows 98 and iMac platforms, the product has been defined with a unique USB ID. As the USB ID is stored in the EEPROM on the main circuit board, it is necessary to enter the USB ID once again when the main circuit board has been replaced. The USB ID consists of an 18-digit unique alphanumerical character string and is stored in a special address on the EEPROM. The method of assigning USB ID numbers prior to shipment from the factory is explained below.

- Production process line number (3 digits)
- PC number (2 digits)
- Year, month, date (12 digits) - The personal computer's time data is used for this
- "0" (1 digit)

A new USB ID is created during the repair process by adding an 8-digit serial number automatically generated by the adjustment program to the end of the existing 10-digit product serial number. This new USB ID is then entered into the control circuit board's EEPROM.

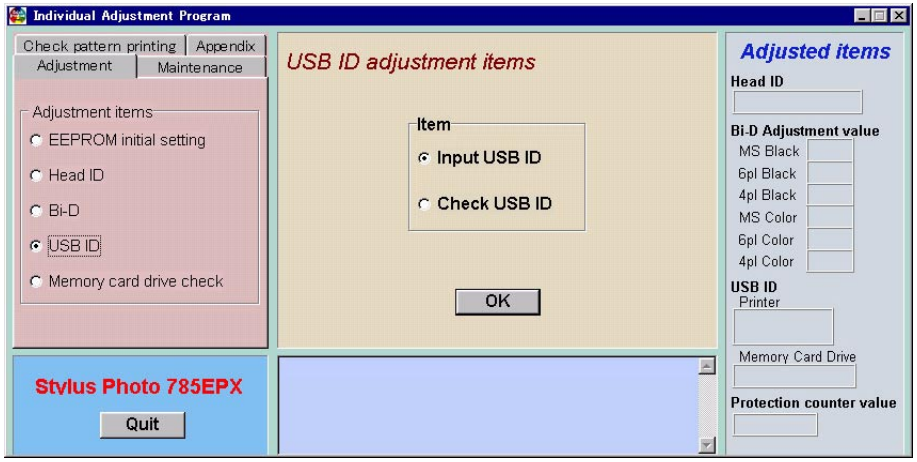



**Figure 5-13. USB ID adjustment items**

Click on the item to be implemented, and then click on the [OK] button. If [Check USB ID] has been selected, the value will be displayed in the center of the screen at the bottom. If [Input USB ID] has been selected, the following screen will be displayed to enable the USB ID to be entered.

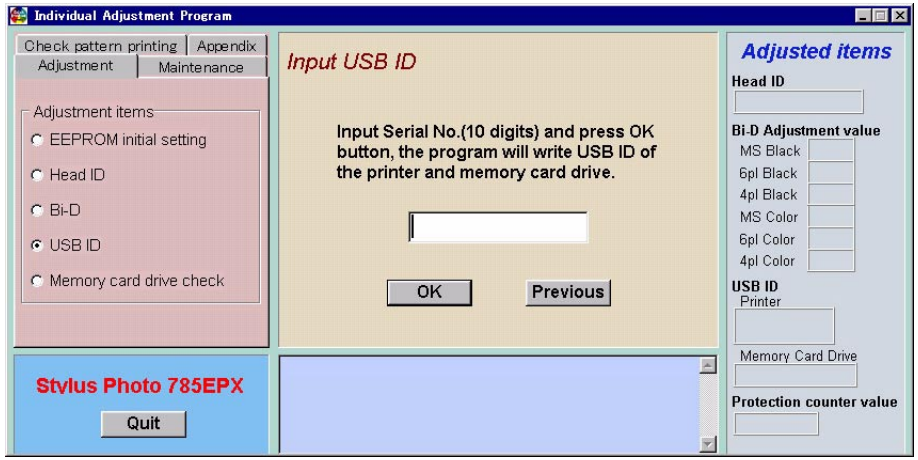



**Figure 5-14. Input USB ID**

To enter a new USB ID into the EEPROM, input only the 10-digit serial number listed on the product information panel on the rear of the printer, and then click on the [OK] button.

## 5.3.7 Memory card drive confirmation

It is possible to check whether the memory card drive is normal when the Main board is replaced.

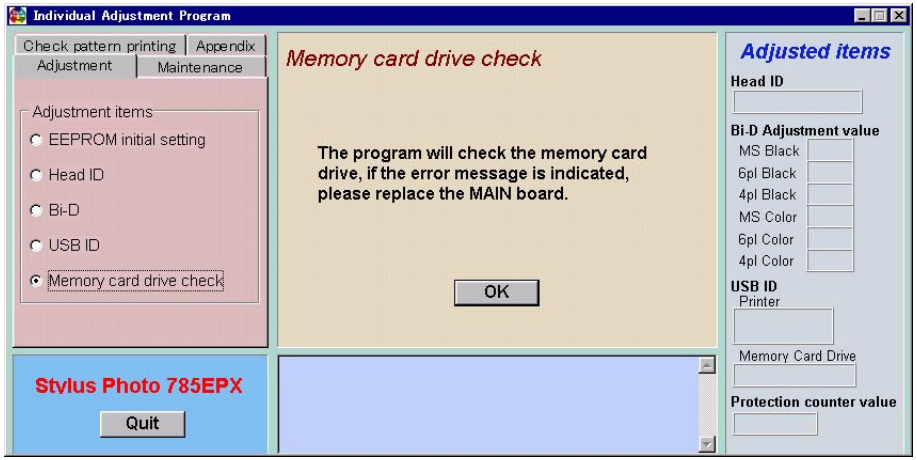



**Figure 5-15. Memory card drive confirmation**

Click on the [OK] button to display the current condition of memory card drive. If an error message is displayed on screen, replace the Main board.

## 5.3.8 Head cleaning

This function enables the heads to be cleaned forcibly from the operation panel. The execution of this function will improve missing dots.

The following ink is to be used for head cleaning.

| | |
|---|---|
| Black: | Unused 1/24 ink cartridge |
| Color: | Unused 1/13 ink cartridge |

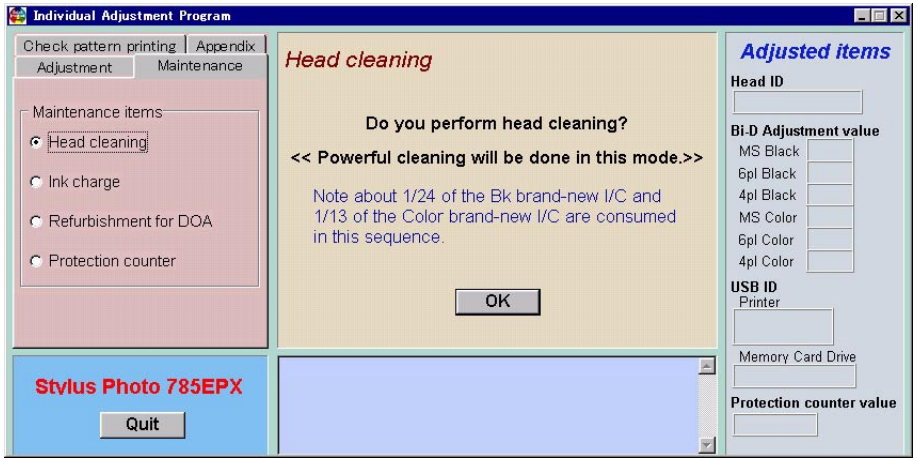



**Figure 5-16. Head cleaning**

Click on the [OK] button to start the head cleaning procedure.

## 5.3.9 Ink replenishment

This function implements the initial ink replenishment process.

The following ink is to be used for ink replenishment.

| | |
|---|---|
| Black: | Unused 1/8 ink cartridge |
| Color: | Unused 1/4 ink cartridge |

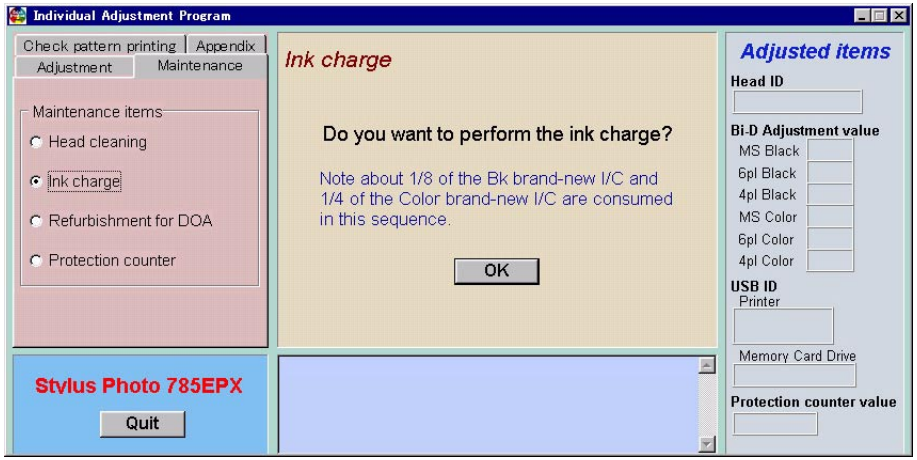



**Figure 5-17. Initial ink charge**

Click on the [OK] button to start the ink replenishment procedure.

## 5.3.10 Refurbishment for DOA

If you clean the cavity of the printhead and cap assembly, this function will be useful.

CAUTION

- **After carry out this function, replace the waste drain ink pad with new one and reset the Waste drain ink pad counter. Otherwise, the ink or S46 liquid may leak from the pad during the transportation.**
- **Prepare the following tool.**
  ***Dummy ink cartridge, Injector, S46 liquid**
- **Do not carry out this program (Exchange sequence 1&2) repeatedly. <u>This operation is available only one time.</u>**
  **Excessive operation causes overflow of the ink& S46 liquid.**
- **When you refurbish the repair product by using this program, do it on your responsibility.**
- **When you charge S46 liquid into the dummy ink cartridge with the Injector, make sure fill out the dummy ink cartridge with S46 liquid. In case enough S46 liquid is not charged into the dummy cartridge, the printhead will not cleaned and not filled with the S46 liquid enough in this operation.**
- **Keep the S46 liquid and the dummy ink cartridge clean.**

Select the “Refurbishment for DOA” function in the Maintenance menu. The main menu of this function is as following figure.

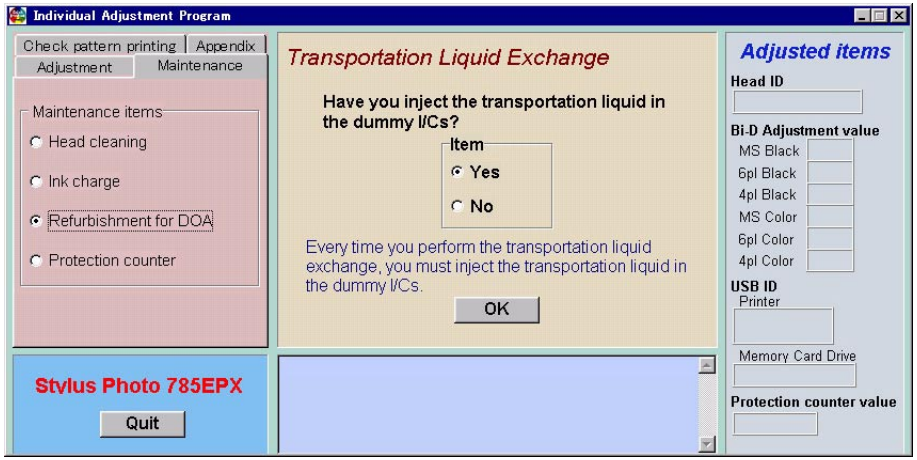



**Figure 5-18. Refurbishment for DOA**

Click the “EXCHANGE SEQUENCE” in the Transportation Liquid Exchange menu.

- Exchange sequence 1
  Set the dummy I/C filled with S46 liquid into the CR unit and press the “Error reset switch” in the printer’s control panel.
  The S46 liquid is charged into the printhead cavity and ink is discharged from printhead cavity to the cap.

- Exchange Sequence 2
  Remove the dummy I/C from the CR unit and press the “Error reset switch SEQUENCE2” in the printer’s control panel. In this sequence, the S46 liquid is not discharged from the printhead and only the ink in the cap is discharged to the waste drain ink pad. After complete this sequence, this program set the initial ink charge flag into the EEPROM and reset the several ink consumption counters to “0”.

## 5.3.11 Protection counter

This function enables the protection counter to be confirmed and to be cleared.

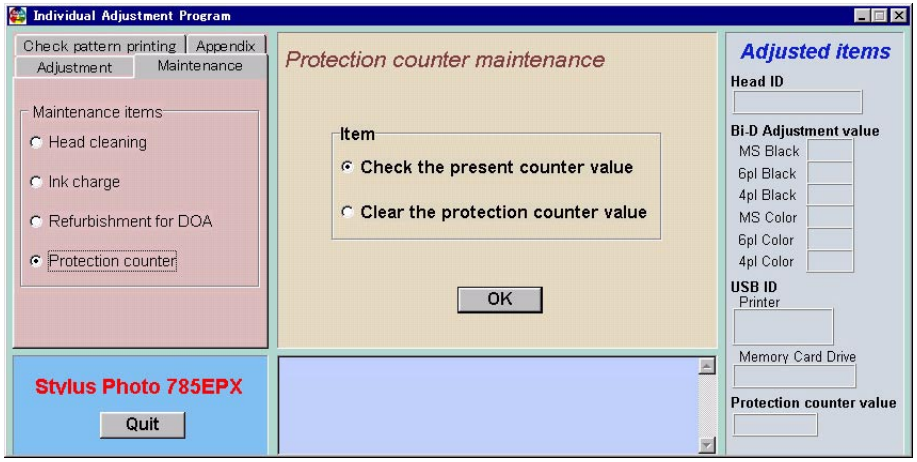



**Figure 5-19. Protection counter**

Click on the item to be adjusted, and then click on the [OK] button. If [Check the present counter value] has been selected, the following screen will be displayed. Click on the [OK] button to display the counter value in the center of the screen at the bottom.

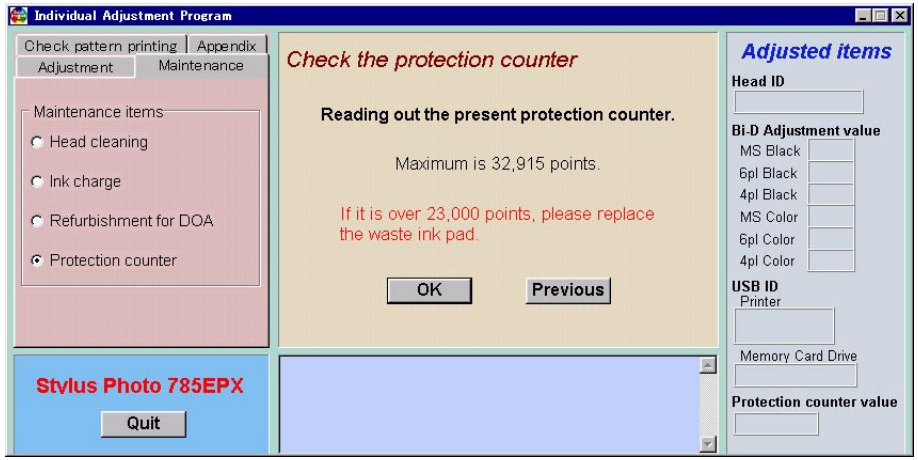



**Figure 5-20. Check the protection counter**

The following screen will be displayed if [Clear the protection counter value] has been selected to enable the protection counter to be cleared. Click on the [OK] button to clear the protection counter.

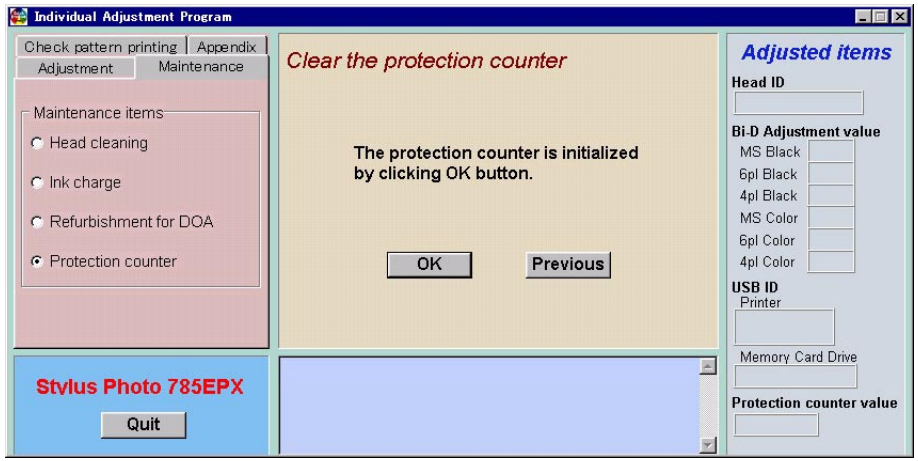



**Figure 5-21. Clear the protection counter**

## 5.3.12 Printing on normal A4 paper

This function prints several test patterns on A4 paper.

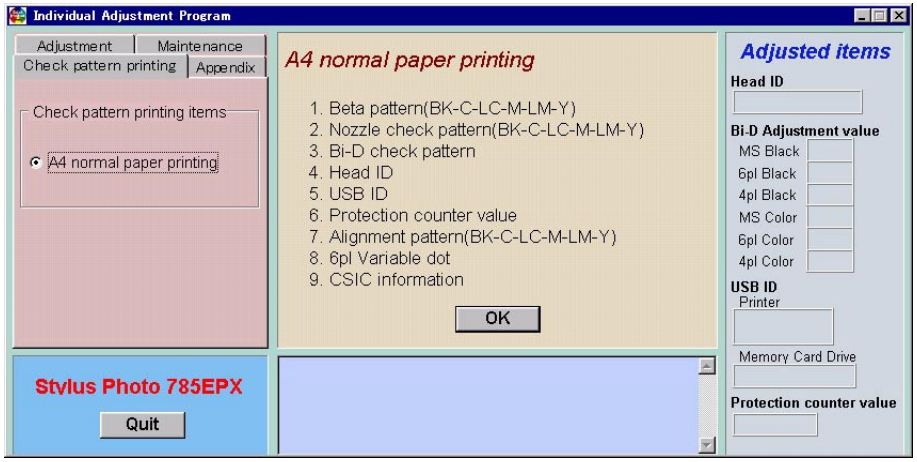


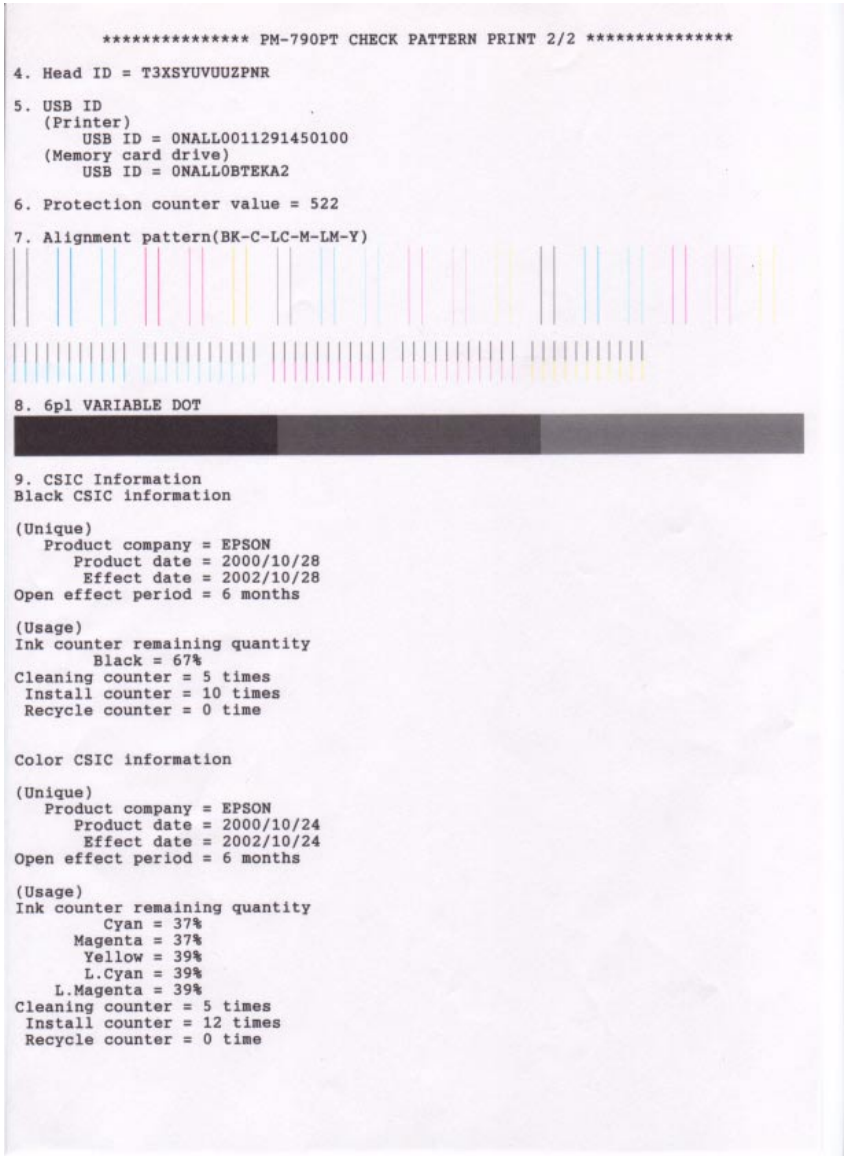

**Figure 5-22. Print A4 pattern**

Two pieces of A4 paper are used by the check pattern. Set two pieces of A4 paper in the printer, and then click on the [OK] button to commence printing.
Check the patterns printed on both pieces on paper. If unacceptable areas exist, make the necessary adjustments with the service program.

The followings show the printed samples.

********** PM-790PT CHECK PATTERN PRINT 1/2 **********
1. Beta pattern(BK-C-LC-M-LM-Y)
2. Nozzle check pattern(BK-C-LC-M-LM-Y)
3. Bi-D check pattern
MS Black
data = -2 data = -1 data = 0 data = 1 data = 2
MS Color
data = -2 data = -1 data = 0 data = 1 data = 2
6pl Black
data = -2 data = -1 data = 0 data = 1 data = 2
6pl Color
data = -2 data = -1 data = 0 data = 1 data = 2
4pl Black
data = -2 data = -1 data = 0 data = 1 data = 2
4pl Color
data = -2 data = -1 data = 0 data = 1 data = 2

**Figure 5-23. Print sample 1**



```
*************** PM-790PT CHECK PATTERN PRINT 2/2 ***************

4. Head ID = T3XSYUVUUZPNR

5. USB ID
   (Printer)
       USB ID = ONALL0011291450100
   (Memory card drive)
       USB ID = ONALL0BTEKA2

6. Protection counter value = 522

7. Alignment pattern(BK-C-LC-M-LM-Y)

8. 6pl VARIABLE DOT

9. CSIC Information
Black CSIC information

(Unique)
   Product company = EPSON
      Product date = 2000/10/28
       Effect date = 2002/10/28
Open effect period = 6 months

(Usage)
Ink counter remaining quantity
         Black = 67%
Cleaning counter = 5 times
 Install counter = 10 times
 Recycle counter = 0 time


Color CSIC information

(Unique)
   Product company = EPSON
      Product date = 2000/10/24
       Effect date = 2002/10/24
Open effect period = 6 months

(Usage)
Ink counter remaining quantity
          Cyan = 37%
       Magenta = 37%
        Yellow = 39%
        L.Cyan = 39%
     L.Magenta = 39%
Cleaning counter = 5 times
 Install counter = 12 times
 Recycle counter = 0 time
```

**Figure 5-24. Print sample 2**

## 5.3.13 CSIC information

The CSIC is the EEPROM mounted onto all black and color ink cartridges. Data, such as the life expectancy of the ink, is stored in the EEPROM. The following menu will be displayed when a tick has been added to [CSIC Information] on the supplementary menu.

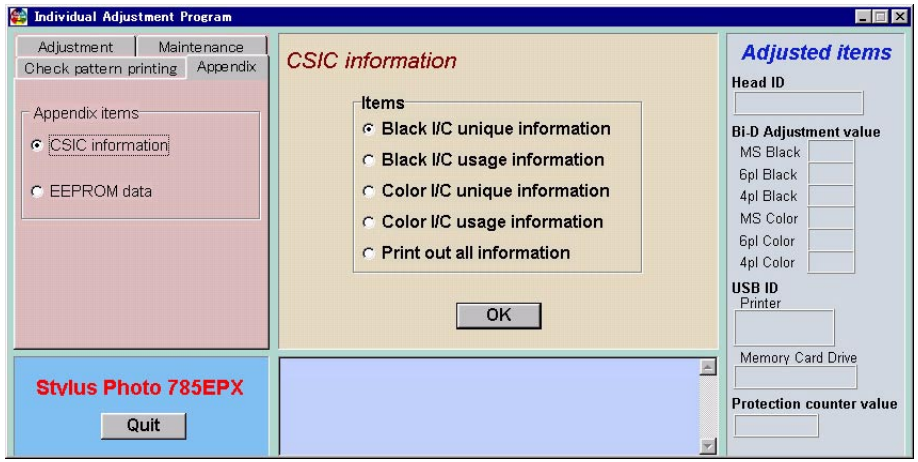



**Figure 5-25. CSIC information**

Select the item for which the information is to be displayed, and then click on the [OK] button. The required information will be displayed on screen. When [Print out all information] is selected, all information will be printed.

## 5.3.14 EEPROM data

This function enables the EEPROM data to be checked and data written by specifying the EPPROM address directly, even when an error has been triggered. (However, this function cannot be used when the CPU in the main logic circuit, the I/F receiver, the RAM or the EEPROM have been damaged.) The following menu will be displayed when a tick has been added to [EEPROM Data] on the supplementary menu.

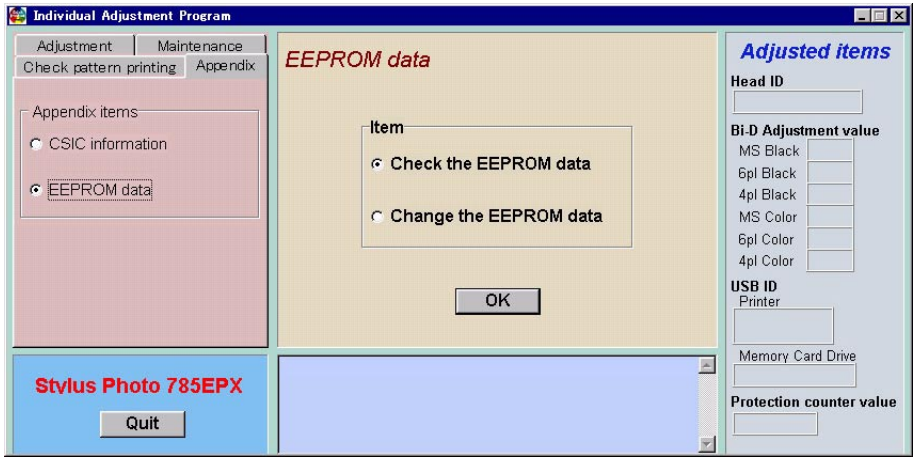



**Figure 5-26. EEPROM data**

The EEPROM data function contains the following two functions:

- Check the EEPROM Data

  This enables the EEPROM data within a range specified by an address to be confirmed.
  Specify the address and then click on the [OK] button. A screen that will call out the EEPROM data from the printer will be displayed.

- Change the EEPSOM data

  It is possible to write data into specified EEPROM addresses, and amend existing values. However, this function should only be used under special circumstances. Note that there is a possibility of trouble occurring if the data is amended to incorrect values.

# 5.4 Firmware update

This section indicates the update procedures on the firmware in the memory card drive.

## 5.4.1 Firmware update method

1. Enter the firmware data in the memory card.

- **Prepare the memory card in the FAT format.**
- **Enter the firmware data to the top layer of memory.**

2. Turn the power of printer OFF.
3. Insert the memory card to the printer, which has the firmware data.
4. Turn the power of printer ON while pressing [¨]+[Ø]+[Æ] on the monochrome screen.
5. When writing data starts, the LED indication appears as follows. Release the button.
   Processing LED: Lights up.
6. Processing LED shifts as follows.
   Lights up Æ Goes off Æ Blinks
7. When the processing LED blinks, it means writing is complete. Turn the power of printer OFF.
8. Wait for 10 seconds after turning the power of printer OFF.

**When writing of firmware is complete, be sure to check the firmware version. (Refer to the 5.4.2 "Firmware version check method")**

## 5.4.2 Firmware version check method

This section describes the check method of the firmware in the memory card drive.

1. Turn the power ON while pressing the Print key, then print the detail environmental setting values.
2. Check the firmware version in the memory card drive. (Refer to the Figure 5-27. "Print Example of Detail Setting Values")

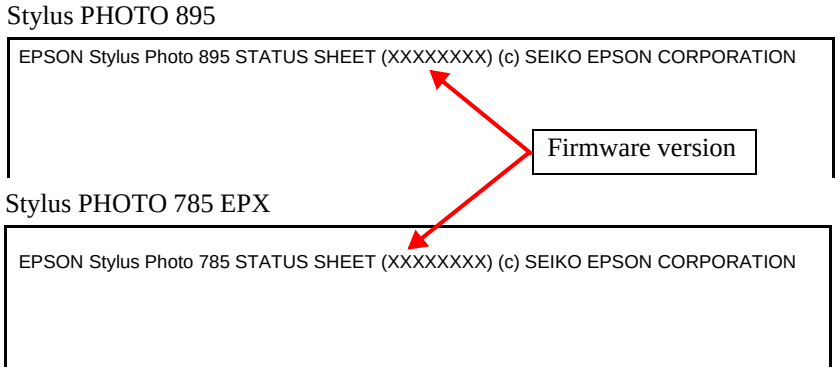

Stylus PHOTO 895
EPSON Stylus Photo 895 STATUS SHEET (XXXXXXXX) (c) SEIKO EPSON CORPORATION
Firmware version
Stylus PHOTO 785 EPX
EPSON Stylus Photo 785 STATUS SHEET (XXXXXXXX) (c) SEIKO EPSON CORPORATION

**Figure 5-27. Print Example of Detail Setting Values**

# 5.5 Adjustment/inspection of the preview monitor

This section describes the adjustment and inspection items when the control board unit and panel unit of the preview monitor are replaced.

## 5.5.1 Update to the firmware for inspection

To inspect the preview monitor, the firmware should be updated to the firmware for inspection. For the update procedures, refer to 5.4 "Firmware update".

Firmware file name for inspection: R4C7060.mot

CAUTION

**Pay great attention not to mistake the firmware for inspection with the actual firmware since they have the same file name.**

After upgrading to the firmware for inspection, the image for inspection can be displayed following the flow chart as shown in Figure 5.28.

Image patterns are displayed in the order as follows.

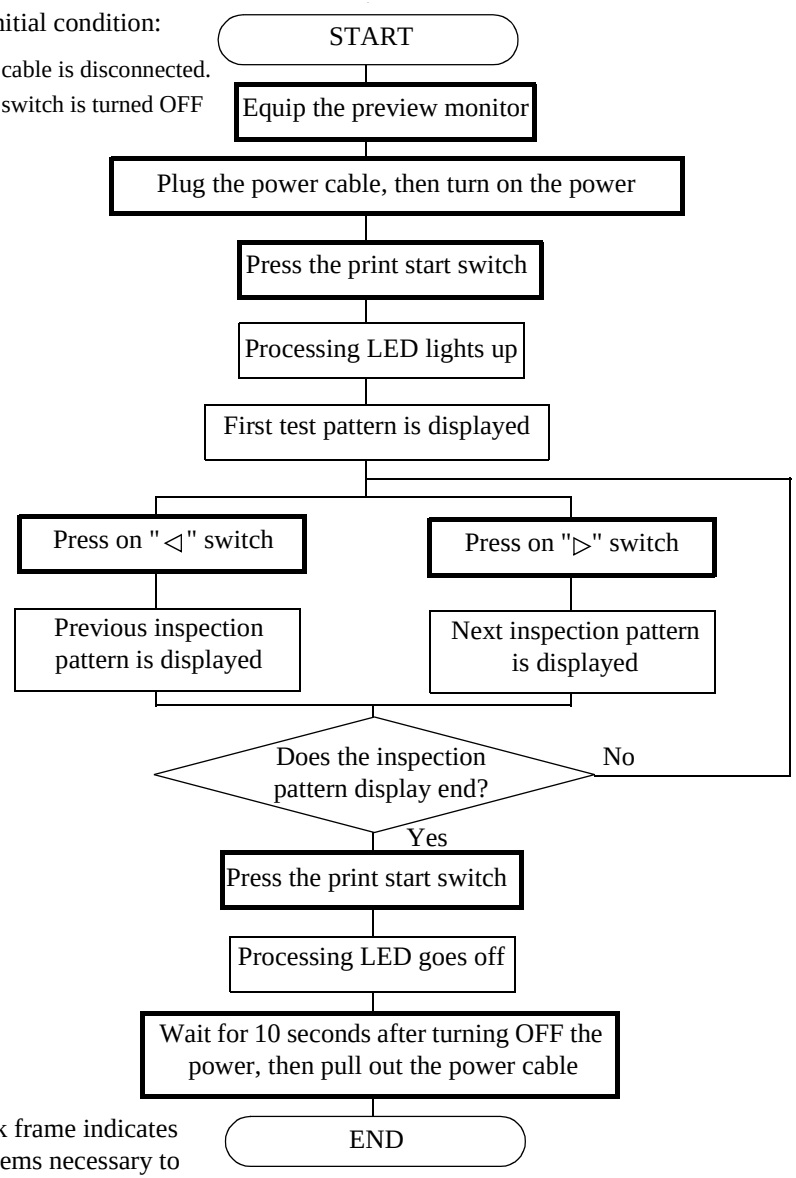
**Table 5-3. Image pattern display order**

| Order | Image pattern | Order | Image pattern |
|---|---|---|---|
| 1 | 16 level gray scales | 5 | Green raster |
| 2 | Color chart | 6 | Blue raster |
| 3 | Window | 7 | White raster |
| 4 | Red raster | 8 | Black raster |

*1: For actual images, refer to the Table 5-4.

Printer initial condition:

- Power cable is disconnected.
- Power switch is turned OFF


START
Equip the preview monitor
Plug the power cable, then turn on the power
Press the print start switch
Processing LED lights up
First test pattern is displayed
Press on "◁" switch
Press on "▷" switch
Previous inspection pattern is displayed
Next inspection pattern is displayed
Does the inspection pattern display end?
No
Yes
Press the print start switch
Processing LED goes off
Wait for 10 seconds after turning OFF the power, then pull out the power cable
END

* Thick frame indicates the items necessary to operate

**Figure 5-28. Inspection image display procedure.**

## 5.5.2 Brightness adjustment

To absorb the individual difference between panel units, adjust VR500 and VR501 on the control board.

CHECK POINT

**To check the image, observe from the front against the screen.**

### 5.5.2.1 Brightness adjustment procedures

WARNING

**To perform the inspection with the rear case removed, pay great attention not to get electric shocks during work.**

1. Update to the firmware for inspection following the procedure in 5.4 "Firmware update".
2. Connect the monitor cable with CN600 with the rear case of preview monitor detached.
3. Display the 16 level gray scales following the Figure 5-28. "Inspection image display procedure.".
4. Turn VR501 and check that the level is variable, then set it at the central click position.
5. Turn the VR500 with the precision screwdriver to adjust so that the 16 levels can be the center.

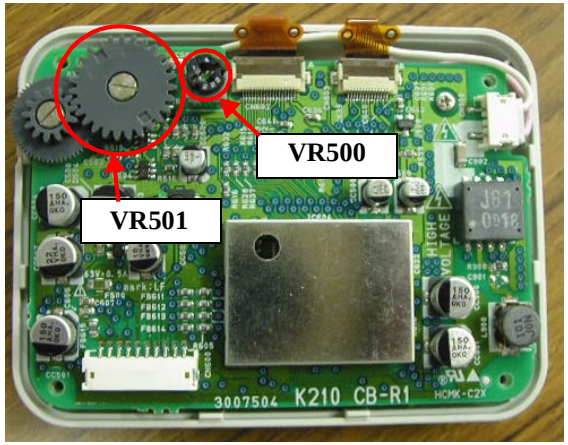



**Figure 5-29. VR instrumentation**

## 5.5.3 Image pattern inspection

This section describes the inspection method of image patterns.

CHECK POINT

**To check the image, observe from the front against the screen.**

**Table 5-4. Image pattern inspection**

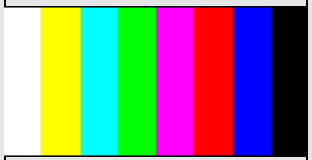
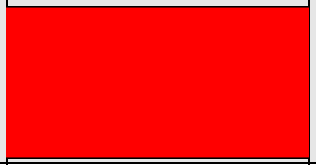
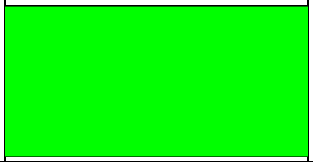
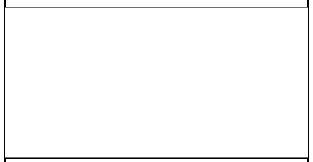
| Inspection item | Display image | Inspection description |
|---|---|---|
| 16 levels Gray scale | | • Levels should be "16 levels".<br>• Levels should be displayed step by step. |
| Color chart |  | • Color pattern should be "8 patterns". <Color order: from left to right> white/yellow/light blue/green/pink/ red/blue/black |
| Window | | • Surrounding of display section should be white.<br>• Center of display section should be black. |
| Red raster |  | • Total area should be red. |

**Table 5-4. Image pattern inspection**

| Inspection item | Display image | Inspection description |
|---|---|---|
| Green raster |  | • Total area should be green. |
| Blue raster | | • Total area should be blue. |
| White raster |  | • Total area should be white. |
| Black raster | | • Total area should be black. |

CHAPTER

# 6

# MAINTENANCE

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# 6.1 Overview

This section provides information to maintain the printer in its optimum condition.

## 6.1.1 Cleaning

This printer has no mechanical components which require regular cleaning except the printhead. Therefore, when returning the printer to the user, check the following parts and perform appropriate cleaning if stain is noticeable

CAUTION

- **Never use chemical solvents, such as thinner, benzine, and acetone to clean the exterior parts of printer like the housing. These chemicals may deform or deteriorate the components of the printer.**
- **Be careful not to damage any components when you clean inside the printer.**
- **Do not scratch the surface (coated part) of PF roller assembly. Use soft brush to wipe off any dusts. Use a soft cloth moistened with alcohol to remove the ink stain.**
- **Do not use cleaning sheet included in the media for normal usage. It may damage the coated surface of PF roller.**
  **If the adhesive surface of the cleaning sheet is set to the ASF LD roller side and used to clean the ASF LD roller surface, it is no problem.**

- ☐ Exterior parts
  Use a clean soft cloth moistened with water and wipe off any dirt. If the exterior parts are stained with ink, use a cloth moistened with neutral detergent to wipe it off.
- ☐ side the printer
  Use a vacuum cleaner to remove any paper dust.
- ☐ ASF LD Roller
  If paper dust on the surface of ASF LD Roller lowers the friction, set the adhesive surface of the cleaning sheet included in the media to the surface of the ASF roller and repeat loading paper from the ASF.

## 6.1.2 Service Maintenance

If print irregularity (missing dot, white line, etc.) has occurred or the printer indicates “Maintenance Error”, take the following actions to clear the error.

☐ **Head Cleaning:**
The printer has a built-in head cleaning function, which is activated by operating the control panel.
Confirm that the printer is in stand-by state (the processing LED on the monochrome PNL is not blinking), and hold down the Error Reset SW on the control panel for more than 3 seconds.
The printer starts the cleaning sequence (the processing LED on the monochrome PNL blinks during the cleaning sequence).

☐ **Maintenance Error Clear:**
Ink is used for the operations such as cleaning as well as printing. Therefore, the printer wastes certain amount of ink and drains it into waste ink pad, while counting the amount of the waste ink. Once the amount of the waste ink reaches the predetermined limit, the printer indicates “Maintenance Error” and the waste ink pad should be replaced.

- Overflow Counter Limit:
  Overflow Counter (Protection Counter A) >=32915
- Timing for Replacing the Waste Ink Pad:
  When the total amount of the waste ink reaches the predetermined limit, the LED indicates “Maintenance Error”. (Refer to section 1.6.4 "Printer Condition and Panel Status")
  Also, during repair servicing, check the ink counter along with the firmware version, ink counter, select code page, nozzle check pattern on the status printing sheet. If the ink counter value is close to its limit, notify your customer and recommend that the waste ink pad be replaced (If the waste ink pad is not replaced at that time, there is a possibility that “Maintenance Error” will occur soon after the printer is returned to the customer). Once you have the confirmation of the customer, replace the waste ink pad.
- Replacement Procedure: Refer to section 4.2.6 "Waste drain ink pad unit removal"
- After the Replacement:
  Reset the Overflow Counter (Protection Counter A):
  Power on printer with Error reset SW and Ink Cartridge exchange SW are pushed, and push Ink Cartridge exchange SW within error indicator is blinking
  (3 seconds).
  Refer to section 1.6.3 "Panel Functions" “Panel Function” for details.

☐ Lubrication
The characteristics of the grease have great affects on the mechanical function and durability, especially does the characteristics about temperature environment. The type and amount of grease used to lubricate the printer parts are determined based on the results of internal evaluations. Therefore, be sure to apply the specified type and amount of grease to the specified part of the printer mechanism during servicing

- **Never use oil or grease other than those specified in this manual. Use of different types of oil or grease may damage the component or give bad influence on the printer function.**
- **Never apply larger amount of grease than specified in this manual.**

**Table 6-1. Specified Lubricants**

| Type | Name | EPSON CODE | Supplier |
|---|---|---|---|
| Grease | G-26 | B702600001 | EPSON |
| Grease | G-56 | 1059150 | EPSON |

**Table 6-2. Lubrication Point**

| No. | Lubrication Type/Point | Remarks |
|---|---|---|
| 1 | **<Lubrication Point>**<br>• The CR shaft.<br>Refer to Figure 6-1. "Lubrication point 1".<br>**<Lubrication Type>**<br>• G-56<br>**<Lubrication Amount>**<br>• Whole inside the CR shaft hole evenly.<br>25+/12.5mg x 4 | • Do not attach the grease to other portion of the CR unit.<br>• Use a syringe to lubricate.<br>• Move the CR guide left and right, smooth out the Geese on the surface of the CR guide shaft.<br>• After lubrication, make sure that the carriage moves smoothly. |
| 2 | **<Lubrication Point>**<br>• Contact point between PF roller and the PF grounding spring. Refer to Figure 6-2. "Lubrication point 2"<br>**<Lubrication Type>**<br>• G-26<br>**<Lubrication Amount>**<br>• Φ1mm x 10mm | • Do not attach the grease to the paper path.<br>• Use a syringe to lubricate. |
| 3 | **<Lubrication Point>**<br>• Groove of the driven pulley holder. Refer to Figure 6-3. "Lubrication point 3".<br>**<Lubrication Type>**<br>• G-26<br>**<Lubrication Amount>**<br>• Φ1mm x 2mm x 4points | • Use a syringe to lubricate. |
| 4 | **<Lubrication Point>**<br>• Inside the sliding slot for ASF Hopper on the ASF Frame.Refer to Figure 6-4. "Lubrication point 4".<br>**<Lubrication Type>**<br>• G-26<br>**<Lubrication Amount>**<br>• Φ1mm x 4points | • Use a syringe to lubricate.<br>• After lubrication, move the ASF hopper manually and smooth out the grease inside the ASF frame. |

**Table 6-2. Lubrication Point**

| No. | Lubrication Type/Point | Remarks |
|---|---|---|
| 5 | **<Lubrication Point>**<br>• Specified both edges area on the Front frame. Refer to Figure 6-5. "Lubrication point 5".<br>**<Lubrication Type>**<br>• G-26<br>**<Lubrication Amount>**<br>• Φ1mm x 200mm x 1 areas | • Use a syringe to lubricate.<br>• After lubrication, move the CR unit left or right and smooth out the grease on the Front frame. |
| 6 | **<Lubrication Point>**<br>• Between the Cam parts on the LD roller shaft and the ASF Hopper. Refer to Figure 6-6. "Lubrication point 6".<br>**<Lubrication Type>**<br>• G-26<br>**<Lubrication Amount>**<br>• Φ1mm x 2mm | • The Cam parts on the LD roller shaft must touch the G-26 lubricated on the ASF hopper in the LD roller shaft rotation.<br>• Use a syringe to lubricate. |
| 7 | **<Lubrication Point>**<br>• Paper eject roller shaft gear, combination gear (16.21.6) and PF roller gear. Refer to Figure 6-7. "Lubrication point 7"<br>**<Lubrication Type>**<br>• G-26<br>**<Lubrication Amount>**<br>• Φ1mm x A quarter of circumference | • After lubrication, rotate the gears manually to check the smooth movement. |
| 8 | **<Lubrication Point>**<br>• Shaft of the ASF assembly. Refer to Figure 6-8. "Lubrication point 8".<br>**<Lubrication Type>**<br>• G-26<br>**<Lubrication Amount>**<br>• Φ1mm x 2mm | • Use a syringe to lubricate. |

**Table 6-2. Lubrication Point**

| No. | Lubrication Type/Point | Remarks |
|---|---|---|
| 9 | **<Lubrication Point>**<br>• Main frame shaft (Right). Refer to Figure 6-9. "Lubrication Point 9".<br>**<Lubrication Type>**<br>• G-26<br>**<Lubrication Amount>**<br>• Φ1mm x 5mm | • Use a syringe to lubricate. |
| 10 | **<Lubrication Point>**<br>• Main frame shaft (Left). Refer to Figure 6-10. "Lubrication point 10".<br>**<Lubrication Type>**<br>• G-26<br>**<Lubrication Amount>**<br>• Φ1mm x 5mm | • Use a syringe to lubricate. |
| 11 | **<Lubrication Point>**<br>• Entire cavity of the PF roller bush. Refer to Figure 6-11. "Lubrication point 11".<br>**<Lubrication Type>**<br>• G-26<br>**<Lubrication Amount>**<br>• Φ3mm x Full circle | • Use a syringe to lubricate. |
| 12 | **<Lubrication Point>**<br>• Shaft of the I/S frame. Refer to Figure 6-12. "Lubrication point 12".<br>**<Lubrication Type>**<br>• G-26<br>**<Lubrication Amount>**<br>• Φ1mm x 8mm | • Use a syringe to lubricate. |

**Table 6-2. Lubrication Point**

| No. | Lubrication Type/Point | Remarks |
|---|---|---|
| 13 | **<Lubrication Point>**<br>• Cavity of the paper eject roller bush (Right). Refer to Figure 6-13. "Lubrication point 13".<br>**<Lubrication Type>**<br>• G-26<br>**<Lubrication Amount>**<br>• Φ2mm x Full circle | • Use a syringe to lubricate. |
| 14 | **<Lubrication Point>**<br>• Roller paper stopper. Refer to Figure 6-14. "Lubrication point 14".<br>**<Lubrication Type>**<br>• G-26<br>**<Lubrication Amount>**<br>• Φ5mm x Diagonal two positions | • Use a syringe to lubricate.<br>• Wipe out the excessive oil. |
| 15 | **<Lubrication Point>**<br>• Combination gear 14.4, 38.4 attaching to the I/S frame. Refer to Figure 6-15. "Lubrication point 15".<br>**<Lubrication Type>**<br>• G-26<br>**<Lubrication Amount>**<br>• Φ1mm x 2mm x 3points | • Use a syringe to lubricate. |
| 16 | **<Lubrication Point>**<br>• Rib of the LD roller shaft. Refer to Figure 6-16. "Lubrication point 16".<br>**<Lubrication Type>**<br>• G-26<br>**<Lubrication Amount>**<br>• Φ1mm x 2mm x 2points | • Use a syringe to lubricate. |

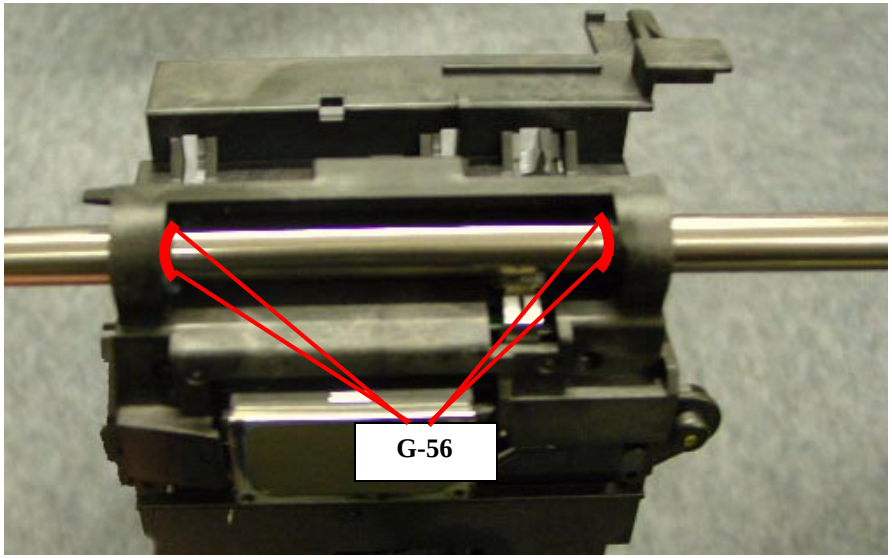


Figure 6-1. Lubrication point 1

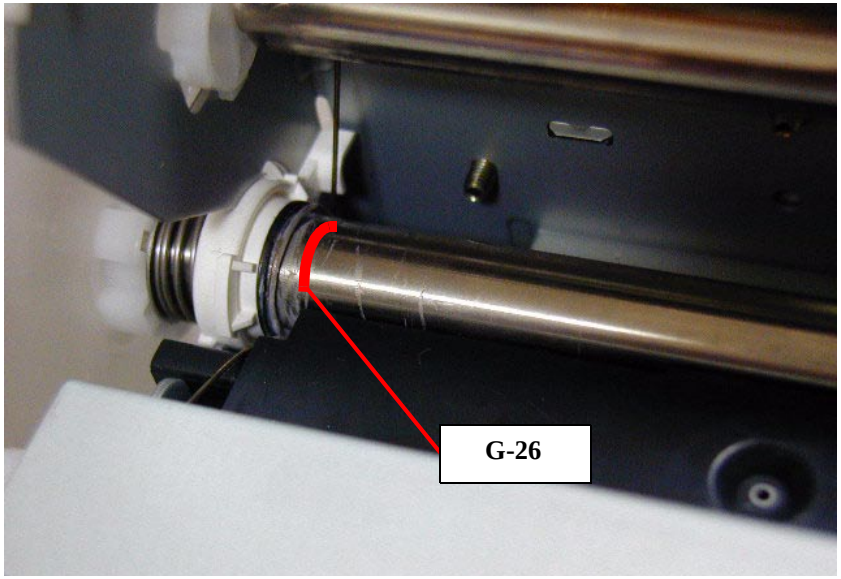


Figure 6-2. Lubrication point 2

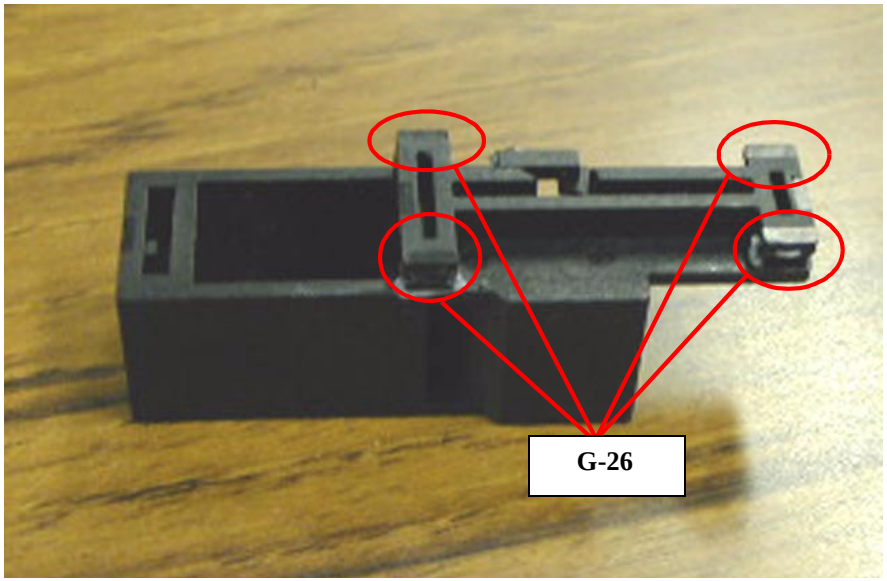


Figure 6-3. Lubrication point 3

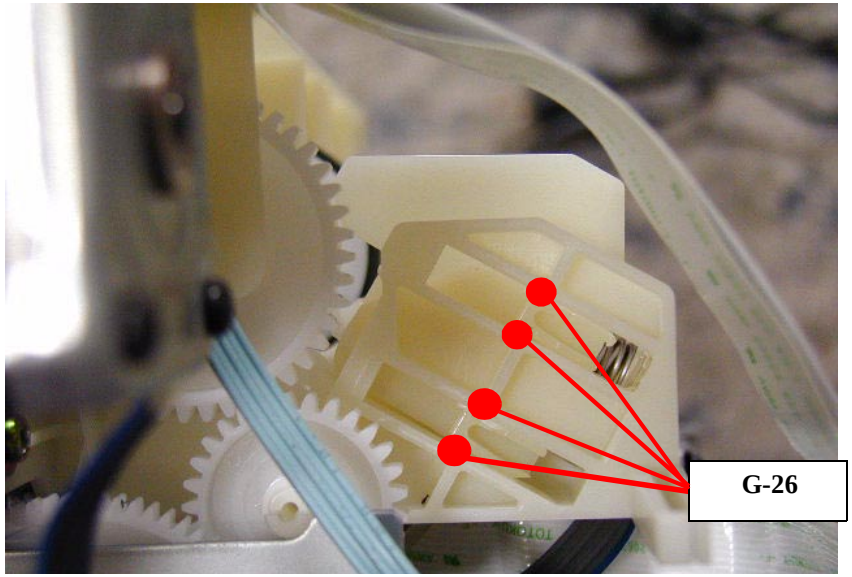


Figure 6-4. Lubrication point 4

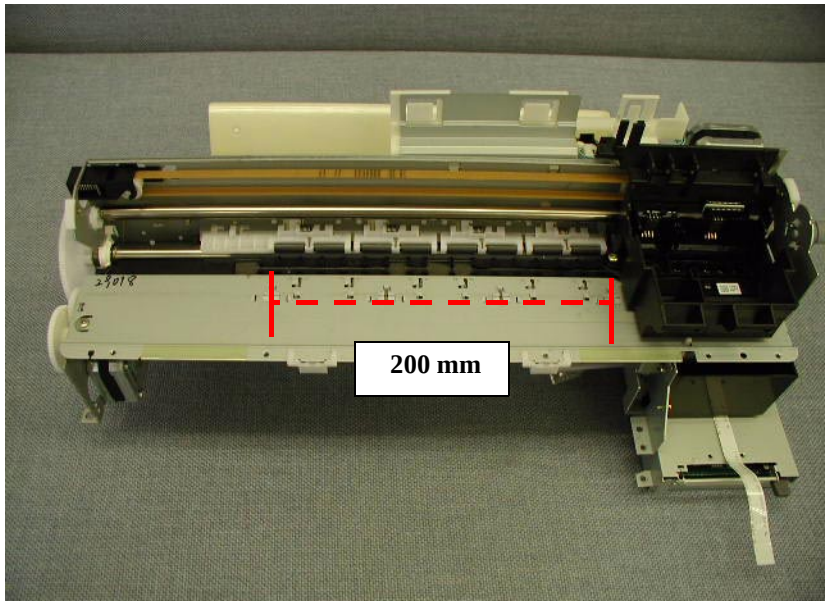


Figure 6-5. Lubrication point 5

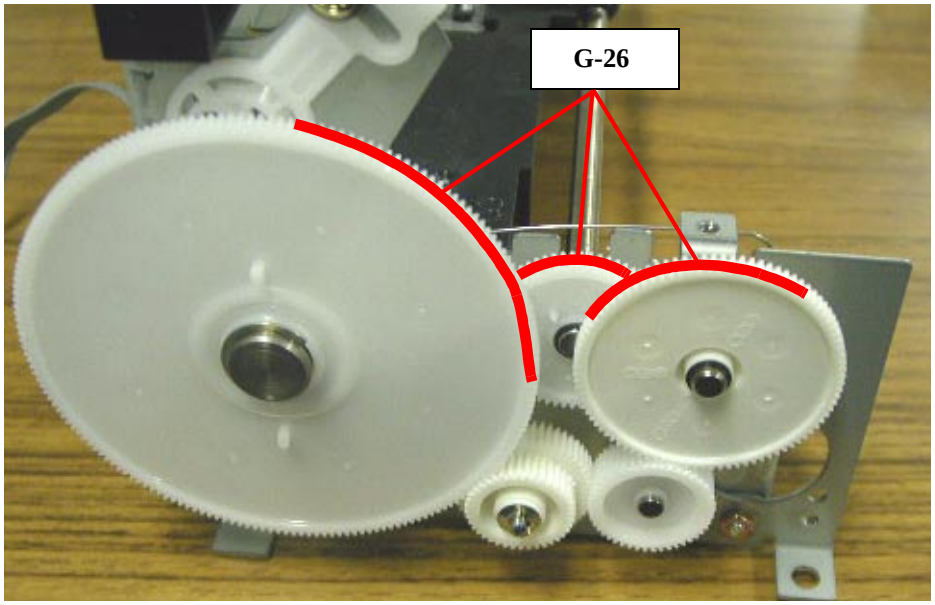


Figure 6-7. Lubrication point 7

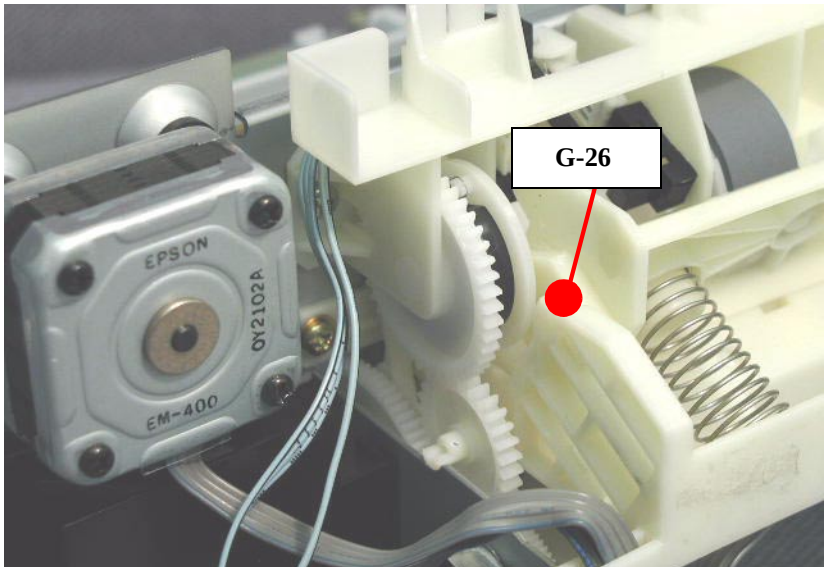


Figure 6-6. Lubrication point 6

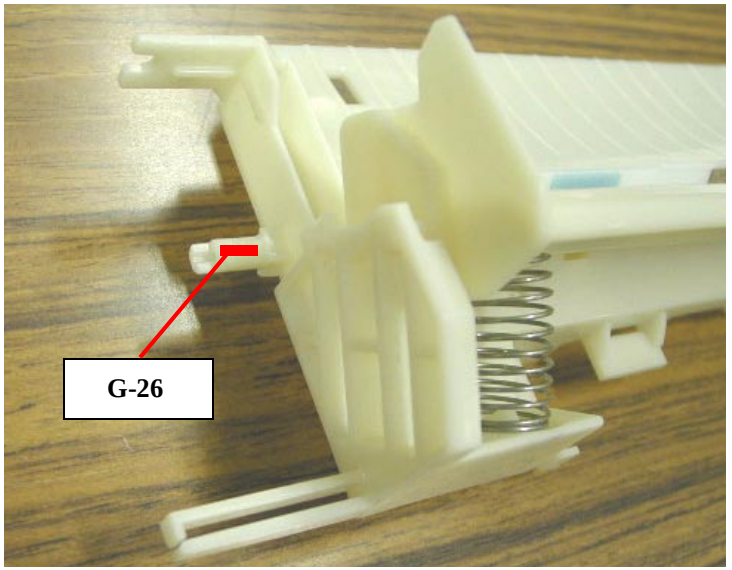


Figure 6-8. Lubrication point 8

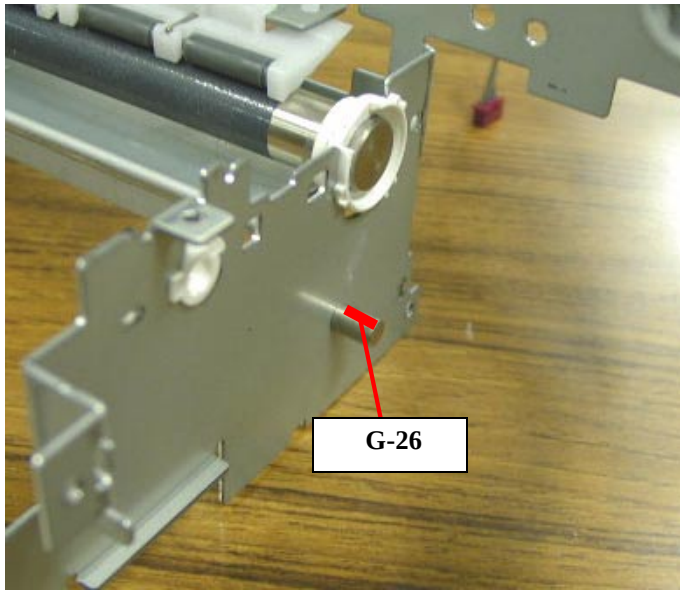


Figure 6-9. Lubrication Point 9

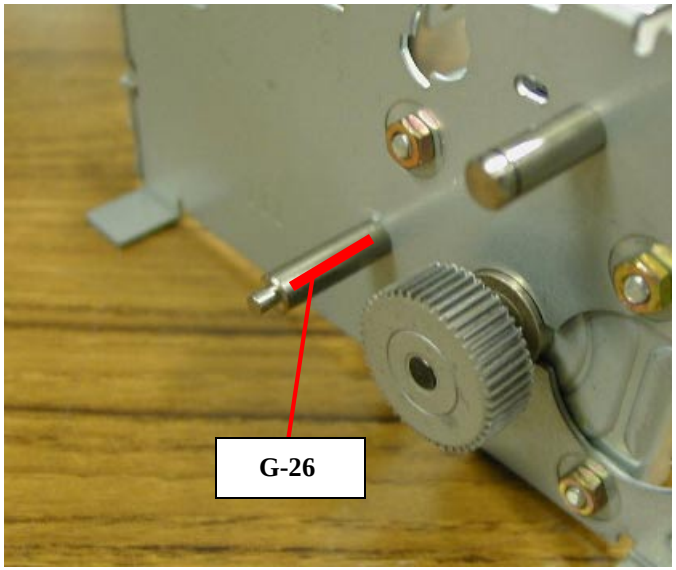


Figure 6-10. Lubrication point 10

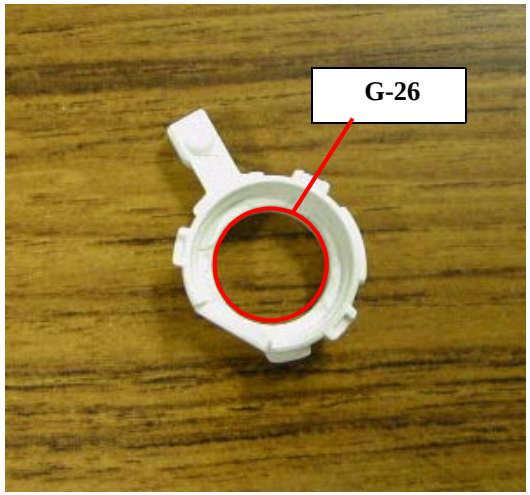


Figure 6-11. Lubrication point 11

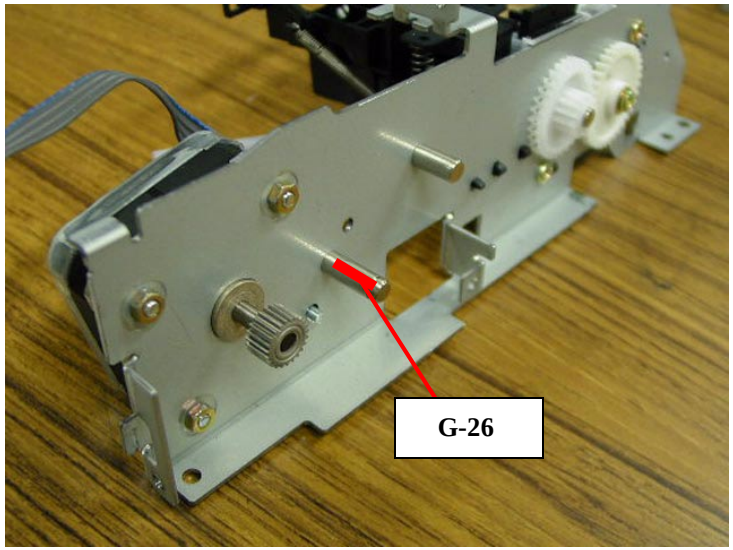


Figure 6-12. Lubrication point 12

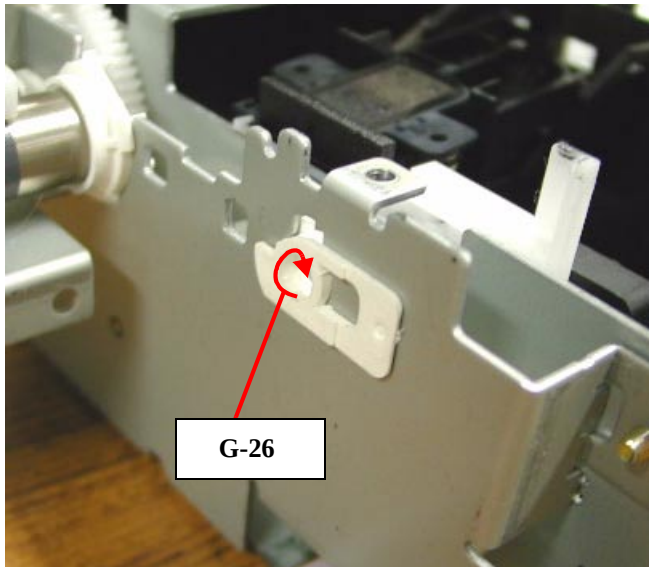


Figure 6-13. Lubrication point 13

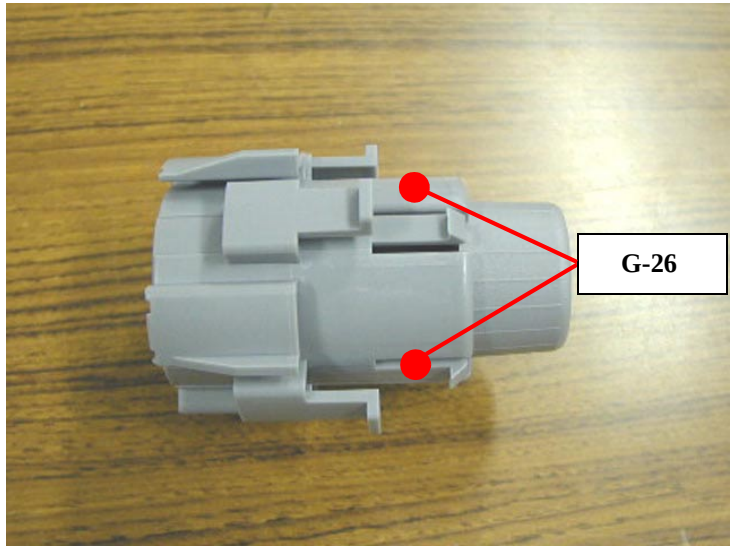


Figure 6-14. Lubrication point 14

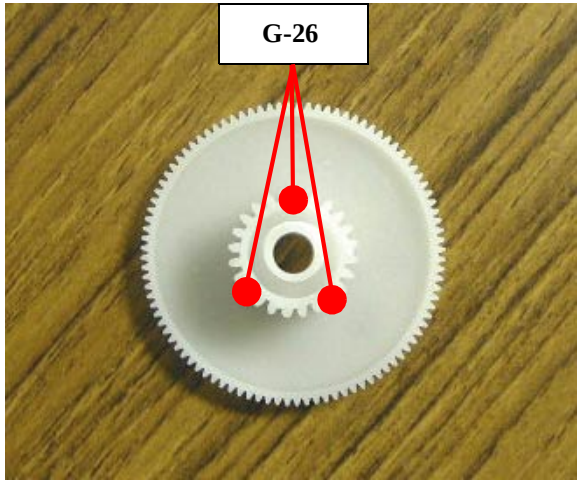


Figure 6-15. Lubrication point 15

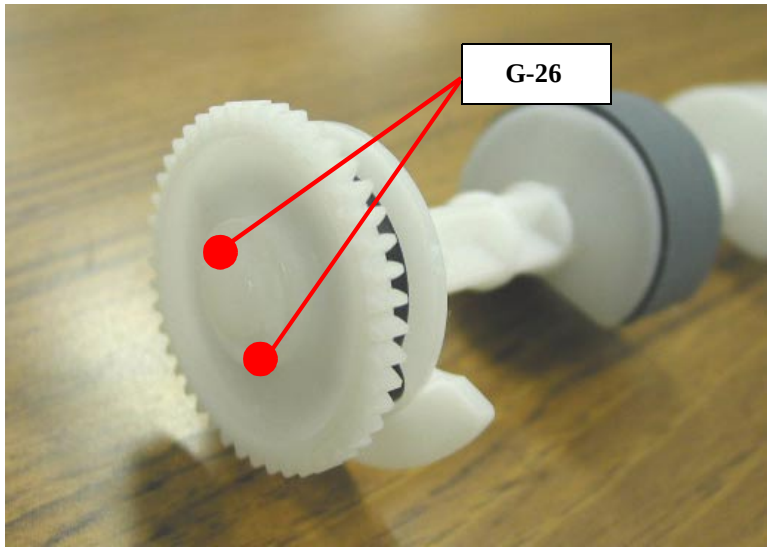


Figure 6-16. Lubrication point 16

CHAPTER

7

# APPENDIX

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# 7.1 Connector Summary

## 7.1.1 Major Component Unit

The Major component units of this printer are as follows.

- ☐ Main Board (C408 MAIN)
- ☐ Power Supply Board (C408 PSE)
- ☐ Monochrome panel board (C408 PNL)
- ☐ Printer panel board (C408PNL-B)

The figure below shows how these components connect.

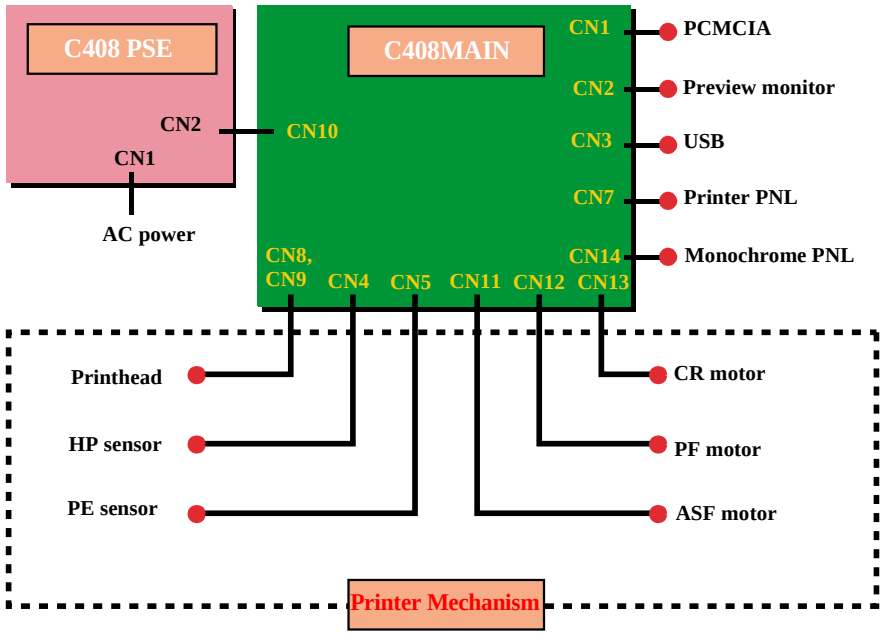



**Figure 7-1. Connection of the Major Components**

See the following tables for the connector summary for the C408 MAIN board and each connector's pin alignment.

**Table 7-1. Connector Summary for C408 MAIN**

| Connector | Function | Table to refer to |
|---|---|---|
| CN1 | PCMCIA | Table 7-2 "CN1 PCMCIA" |
| CN2 | Preview monitor | Table 7-3 "CN2 Preview Monitor" |
| CN3 | USB I/F | Table 1-3 "Connector Pin Assignment and Signals" |
| CN4 | HP sensor | Table 7-4 "CN4 Sensor" |
| CN5 | PE sensor | Table 7-5 "CN5 PE Sensor" |
| CN7 | Printer PNL | Table 7-6 "CN7 Printer PNL" |
| CN8, CN9 | Printhead | Table 7-7 "CN8 Printhead"Table 7-8 "CN9 Printhead" |
| CN10 | Power supply board | Table 7-9 "CN10 Power Connector" |
| CN11 | ASF motor | Table 7-10 "CN11 ASF Motor" |
| CN12 | PF motor | Table 7-11 "CN12 PF Motor" |
| CN13 | CR motor | Table 7-12 "CN13 CR Motor" |
| CN14 | Monochrome PNL | Table 7-13 "CN14 Monochrome PNL" |

### Table 7-2. CN1 PCMCIA

| Pin | Signal name | Function |
|---|---|---|
| 1,34,35,68 | GND | Ground |
| 17,51 | VCC | VCC |
| 18,52 | VPP | VPP |
| 41,40,39,38,37, 66,65,64,7,5,4, 3,2,32,31,30 | CD15,14,13,12, 11,10,9,8, 7,6,5,4,3,2,1,0 | PCMCIA slot data bus |
| 56,55,54,53, 50,49,48,47,46, 19,20,14,13, 21,10,8,11,12, 22,23,24,25,26, 27,28,29 | CA25,24,23,22, 21,20,19,18,17, 16,15,14,13, 12,11,10,9,8, 7,6,5,4,3,2,1,0 | PCMCIA slot address bus |
| 61 | /REG | Register selection |
| 7 | /CE1 | Card enable |
| 42 | /CE2 | Card enable |
| 9 | /OE | Output enable |
| 15 | /WE | Write enable |
| 44 | /IORD | I/O read |
| 45 | /IOWR | I/O write |
| 58 | RESET | Reset |
| 16 | RDY | Ready |
| 59 | /WAIT | Bus cycle prolonged |
| 62 | BVD2/SPKR | Battery voltage detection/Audio digital waveform |
| 63 | BVD1/STSCHG | Battery voltage detection/Card status change |
| 60 | INPACK | Input port response |
| 33 | WP/IOIS16B | Write protect/I/O port is 16 bits |
| 43 | VS1 | Voltage sensing 1 |

Table 7-2. CN1 PCMCIA

| Pin | Signal name | Function |
|---|---|---|
| 57 | VS2 | Voltage sensing 2 |
| 36 | /CD1 | Card detection |
| 67 | /CD2 | Card detection |

### Table 7-3. CN2 Preview Monitor

| Pin | Signal name | I/O | Function |
|---|---|---|---|
| 1 | +5V | --- | +5V power supply |
| 2 | +5V | --- | +5V power supply |
| 3 | GND | --- | Ground |
| 4 | GND | --- | Ground |
| 5 | DETECT | Out | Color LCD I/F panel detection signal |
| 6 | XPNLRST | Out | Color LCD I/F reset signal |
| 7 | SDATA | Out | Color LCD I/F indication signal |
| 8 | SCLK | Out | Color LCD I/F shift clock |
| 9 | SCE | Out | Color LCD I/F chip enable signal |

### Table 7-4. CN4 Sensor

| Pin | Signal name | I/O | Function |
|---|---|---|---|
| 1 | HP | In | Sensor detection signal |
| 2 | GND | --- | Ground |
| 3 | HPV | --- | Sensor supply voltage |

### Table 7-5. CN5 PE Sensor

| Pin | Signal name | I/O | Function |
|---|---|---|---|
| 1 | PE | In | Sensor detection signal |
| 2 | GND | --- | Ground |
| 3 | PEV | --- | Sensor supply voltage |

### Table 7-6. CN7 Printer PNL

| Pin | Signal name | I/O | Function |
|---|---|---|---|
| 1 | SWB2 | In | Cartridge key |
| 2 | LEDB1 | Out | Error LED |
| 3 | SWB3 | In | Roll paper key |
| 4 | +5V | --- | +5V power supply |
| 5 | GND | --- | Ground |
| 6 | SWB1 | In | Maintenance key |
| 7 | SWB0 | In | Power key |
| 8 | PSC | In | Power switch |

### Table 7-7. CN8 Printhead

| Pin | Signal name | I/O | Function |
|---|---|---|---|
| 1 | SI6 | Out | Print data output (6) |
| 2 | SI5 | Out | Print data output (5) |
| 3 | SI4 | Out | Print data output (4) |
| 4 | GND | --- | Ground |
| 5 | SCK | Out | Serial clock |
| 6 | GND | --- | Ground |
| 7 | CH | Out | Waveform selection signal of the MS and variable shots |
| 8 | COC | In | Color I/C detection signal |

### Table 7-7. CN8 Printhead

| Pin | Signal name | I/O | Function |
|---|---|---|---|
| 9 | RXD | Out | CSIC output |
| 10 | COB | In | Black I/C detection signal |
| 11 | TXD | In | CSIC output |
| 12 | VDD3.3 | --- | Logic power supply (+3.3V) |
| 13 | GND | --- | Ground |
| 14 | COM | --- | Head drive pulse (trapezoid wave) |
| 15 | GND | --- | Ground |
| 16 | COM | --- | Head drive pulse (trapezoid wave) |
| 17 | GND | --- | Ground |

### Table 7-8. CN9 Printhead

| Pin | Signal name | I/O | Function |
|---|---|---|---|
| 1 | COM | --- | Head drive pulse (trapezoid wave) |
| 2 | GND | --- | Ground |
| 3 | COM | --- | Head drive pulse (trapezoid wave) |
| 4 | GND | --- | Ground |
| 5 | VHV | --- | +42V power supply for nozzle selector |
| 6 | GND | --- | Ground |
| 7 | SEL | In | Command select |
| 8 | GND | --- | Ground |
| 9 | VDD | --- | Logic power supply (+5V) |
| 10 | LAT | Out | Head data latch pulse output |
| 11 | GND | --- | Ground |
| 12 | NCHG | Out | All nozzle fire selection pulse |

### Table 7-8. CN9 Printhead

| Pin | Signal name | I/O | Function |
|---|---|---|---|
| 13 | THM | In | Thermistor detect signal |
| 14 | SI1 | Out | Print data output (1) |
| 15 | SI2 | Out | Print data output (2) |
| 16 | SI3 | Out | Print data output (3) |
| 17 | SP | Out | Select signal for CH signal |

### Table 7-9. CN10 Power Connector

| Pin | Signal name | I/O | Function |
|---|---|---|---|
| 1 | +42V | --- | +42V power supply |
| 2,3 | GND | --- | Ground |
| 4,5 | +5V | --- | +5V power supply |
| 6 | ESAVE | In | ESAVE signal |
| 7 | PSC | In | PSC signal |
| 8,9,10 | GND | --- | Ground |
| 11,12 | +3.3V | --- | +3.3V power supply |

### Table 7-10. CN11 ASF Motor

| Pin | Signal name | I/O | Function |
|---|---|---|---|
| 1 | ASFA | Out | Phase drive signal (A) |
| 2 | ASFB | Out | Phase drive signal (-A) |
| 3 | ASF-A | Out | Phase drive signal (B) |
| 4 | ASF-B | Out | Phase drive signal (-B) |

### Table 7-11. CN12 PF Motor

| Pin | Signal name | I/O | Function |
|---|---|---|---|
| 1 | PFA | Out | Phase drive signal (A) |
| 2 | PFB | Out | Phase drive signal (-A) |
| 3 | PF-A | Out | Phase drive signal (B) |
| 4 | PF-B | Out | Phase drive signal (-B) |

### Table 7-12. CN13 CR Motor

| Pin | Signal name | I/O | Function |
|---|---|---|---|
| 1 | CRA | Out | Phase drive signal (A) |
| 2 | CRB | Out | Phase drive signal (-A) |
| 3 | CR-A | Out | Phase drive signal (B) |
| 4 | CR-B | Out | Phase drive signal (-B) |

### Table 7-13. CN14 Monochrome PNL

| Pin | Signal name | I/O | Function |
|---|---|---|---|
| 1 | SWA3 | In | Frame selection key |
| 2 | SWA6 | In | Cross (right) key |
| 3 | SWA2 | In | Print start key |
| 4 | SWA5 | In | Cross (down) key |
| 5 | SWA1 | In | Stop key |
| 6 | SWA4 | In | Cross (upper) key |
| 7 | SWA0 | In | Frame key |
| 8 | SWA7 | In | Cross (left) key |
| 9 | GND | --- | Ground |
| 10 | LEDA0 | Out | Accessing/Printing LED signal |
| 11 | GND | --- | Ground |

**Table 7-13. CN14 Monochrome PNL**

| Pin | Signal name | I/O | Function |
|---|---|---|---|
| 12 | INH | Out | LCD I/F indication lights-out |
| 13 | +3.3V | --- | +3.3V power supply |
| 14 | CE | Out | LCD I/F chip enable signal |
| 15 | +5V | --- | +5V power supply |
| 16 | SCL | Out | LCD I/F shift clock |
| 17 | DN | Out | LCD I/F indication data |

## 7.1.2 EEPROM Address Map (printer section)

**Table 7-14. EEPROM Address Map**

| Address | Explanation | Setting | QPIT setting | Factory setting |
|---|---|---|---|---|
| 00H | Ink flag1 | Bit7: CSIC Disable<br>Bit6: black one-time<br>Bit5: color one-time<br>Bit4: Initial charge required<br>Bit3: Reserved<br>Bit2: ink cleaning seq.<br>Bit1: black CL required<br>Bit0: color CL required | 00H | 10H |
| 01H | Ink flag2 | Bit7: Reserved<br>Bit6: Black 1st Ink Cartridge<br>Bit5: Color 1st Ink Cartridge<br>Bit4: Bk CSIC changed Flag1<br>Bit3: YMC CSIC changed Flag1<br>Bit2: Reserved<br>Bit1: Reserved<br>Bit0: Reserved | 00H | 00H |
| 02H<br>\|<br>05H | Ink counter Cb | | 00H<br>\|<br>00H | 00H<br>\|<br>00H |
| 06H<br>\|<br>09H | Ink counter Cy | | 00H<br>\|<br>00H | 00H<br>\|<br>00H |
| 0AH<br>\|<br>0DH | Ink counter Cm | | 00H<br>\|<br>00H | 00H<br>\|<br>00H |
| 0EH<br>\|<br>11H | Ink counter Cc | | 00H<br>\|<br>00H | 00H<br>\|<br>00H |

**Table 7-14. EEPROM Address Map**

| Address | Explanation | Setting | QPIT setting | Factory setting |
|---|---|---|---|---|
| 12H<br>\|<br>15H | Ink counter Clm | | 000H<br>\|<br>00H | 00H<br>\|<br>00H |
| 16H<br>\|<br>19H | Ink counter Clc | | 00H<br>\|<br>00H | 00H<br>\|<br>00H |
| 1AH | Ink counter A0 | | 00H | 00H*3 |
| 1BH | | | 00H | 00H*3 |
| 1CH | Ink counter Rb0 | | 00H | 00H*3 |
| 1DH | | | 00H | 00H*3 |
| 1EH | Ink counter Ry0 | | 00H | 00H*3 |
| 1FH | | | 00H | 00H*3 |
| 20H | CL time | | 00H | 00H*2 |
| 21H | | | 00H | 00H*2 |
| 22H | CPU Time | | 00H | 00H*2 |
| 23H | | | 00H | 00H*2 |
| 24H | Accumulated printing time | | 00H | 00H |
| 25H | | | 00H | 00H |
| 26H | D4mode I/F | Bit7: I/F Control Flag<br>Bit6: | 85H | 85H (*a) |
| | | Bit5: Reserved<br>Bit4: | | |
| | | Bit3: D4mode USB<br>Bit2: | | |
| | | Bit1: D4mode Parallel<br>Bit0: | | |
| 27H | Initial Charge Counter | | 00H | 00H |

**Table 7-14. EEPROM Address Map**

| Address | Explanation | Setting | QPIT setting | Factory setting |
|---|---|---|---|---|
| 28H | ERROR Code | | 00H | -- (don't care) |
| 29H | Roll paper flag | Bit1: Panel Load Mode<br>Bit0: Roll Paper Mode | 00H | 00H |
| 2AH | Reserved | | 00H | 00H |
| 2BH | Reserved | | 00H | 00H |
| 2CH | Reserved | | 00H | 00H |
| 2DH | Reserved | | 00H | 00H |
| 2EH | Reserved | | 00H | 00H |
| 2FH | Reserved | | 00H | 00H |

*data in 00h ~ 2Fh are written to EEPROM at NMI*

*a:D4mode setting (EEPROM 26H)

**USB**

| Bit3 | Bit2 | D4mode |
|---|---|---|
| 0 | 0 | Auto |
| 0 | 1 | On |
| 1 | 0 | Off |

**Parallel**

| Bit1 | Bit0 | D4mode |
|---|---|---|
| 0 | 0 | Auto |
| 0 | 1 | On |
| 1 | 0 | Off |

**Table 7-14. EEPROM Address Map**

| Address | Explanation | Setting | QPIT setting | Factory setting |
|---|---|---|---|---|
| 30H | Interface selection | Bit7: Reserved<br>Bit6: Reserved<br>Bit5: Reserved<br>Bit4: Reserved<br>Bit3: USB<br>Bit2: Reserved<br>Bit1: Parallel<br>Bit0: Auto | 00H | 00H*2 |
| 31H | Interface time-out | 0 to 255<br>(by second, value of 0 means 10seconds) | 0AH | 0AH |
| 32H | I/F Speed | Bit7: Reserved<br>Bit6:<br>Bit5: Reserved<br>Bit4:<br>Bit3: ECP speed<br>Bit2:<br>Bit1: Compatibility speed<br>Bit0: | 00H | 00H |
| 33H | Bi-D Adjustment for MultiShot (Bk) | -72<=n<=+72(by 1/2880inch) | 00H | (*1) |
| 34H | Bi-D Adjustment for 6plVSD (Bk) | -72<=n<=+72 (by 1/2880inch) | 00H | (*1) |
| 35H | Bi-D Adjustment for 4plVSD (Bk) | -72<=n<=+72 (by 1/2880inch) | 00H | (*1) |
| 36H | Bi-D Adjustment for MultiShot (Cl) | -72<=n<=+72 (by 1/2880inch) | 00H | (*1) |
| 37H | Bi-D Adjustment for 6plVSD (Cl) | -72<=n<=+72 (by 1/2880inch) | 00H | (*1) |
| 38H | Bi-D Adjustment for 4plVSD (Cl) | -72<=n<=+72 (by 1/2880inch) | 00H | (*1) |

**Table 7-14. EEPROM Address Map**

| Address | Explanation | Setting | QPIT setting | Factory setting |
|---|---|---|---|---|
| 39H | 1stDot Position Adjustment | -72<=n<=+72 (by 1/2880inch) | 00H | (*1) |
| 3AH | CL2 Counter KK | | 00H | 03H |
| 3BH | Total Timer CL Counter | | 00H | 00H |
| 3CH | Printer For CSIC | | 00H | 89H: Standard<br>09H: Japan |
| 3DH | CSIC1_InkName1; | | 00H | 00H |
| 3EH | CSIC2_InkName1; | | | |
| 3FH | Head Actuator Rank ID for VhN | +1<=n<=+32 | 00H | (*1) |
| 40H | Head Actuator Rank ID for VhM | +1<=n<=+37 | 00H | (*1) |
| 41H | Head Actuator Rank ID for VhL | +1<=n<=+34 | 00H | (*1) |
| 42H | Head Actuator Rank ID for VhU | +1<=n<=+40 | 00H | (*1) |
| 43H | Head Actuator Rank ID for VhM2 | +1<=n<=+34 | 00H | (*1) |
| 44H | Head Actuator Rank ID for VhB | +1<=n<=+34 | 00H | (*1) |
| 45H | Head Actuator Rank ID for AR | 0<=n<=+6 | 00H | (*1) |
| 46H | Head Actuator Rank ID for IwB | +30<=n<=+70 | 00H | (*1) |
| 47H | Head Actuator Rank ID for IwC | +30<=n<=+70 | 00H | (*1) |
| 48H | Head Actuator Rank ID for IwM | +30<=n<=+70 | 00H | (*1) |

**Table 7-14. EEPROM Address Map**

| Address | Explanation | Setting | QPIT setting | Factory setting |
|---|---|---|---|---|
| 49H | Head Actuator Rank ID for IwY | +30<=n<=+70 | 00H | (*1) |
| 4AH | Head Actuator Rank ID for IwLC | +30<=n<=+70 | 00H | (*1) |
| 4BH | Head Actuator Rank ID for IwLM | +30<=n<=+70 | 00H | (*1) |
| 4CH<br>\|<br>5DH | USB ID | | 00H<br>\|<br>00H | (*1)<br>\|<br>(*1) |
| 5EH | Market ID | 0: World (Euro, Asia)<br>1: Japan<br>2: Custom<br>3: World (US) | 00H | 03H |
| 5FH | Reserved | | | |
| 60H<br>\|<br>7DH | Model Name | | 00H<br>\|<br>00H | -<br>\|<br>- |
| 7EH | Password | | 55H | - |
| 7FH | Password | | 33H | - |

*Note :*
**1 Adjusted at factory.*
**2 Initialized after performed panel initialization of EEPROM.*
**3 Initialized after performed panel initialization of the ink overflow.*

## 7.1.3 EEPROM Address Map (Storage section)

**Table 7-15. EEPROM Address Map**

| Address | Field | Description | QPIT Setting | Factory Setting |
|---|---|---|---|---|
| 0x80 | iProduct | Strings of Product descriptor in the USB Storage calss(1) | 0x00 | 0x53 |
| 0x81 | | ASCII code, terminated by NULL, maximum 23 characters | 0x00 | 0x00 |
| 0x82 | | ("SP<SP> 895<SP>Storage<SP><SP>") or | 0x00 | 0x50 |
| 0x83 | | ("SP<SP> 785EPX<SP>Storage") | 0x00 | 0x00 |
| 0x84 | | | 0x00 | 0x20 |
| 0x85 | | | 0x00 | 0x00 |
| 0x86 | | | 0x00 | 0x38 or 0x37 |
| 0x87 | | | 0x00 | 0x00 |
| 0x88 | | | 0x00 | 0x39 or 0x38 |
| 0x89 | | | 0x00 | 0x00 |
| 0x8a | | | 0x00 | 0x35 |
| 0x8b | | | 0x00 | 0x00 |
| 0x8c | | | 0x00 | 0x20 or 0x45 |
| 0x8d | | | 0x00 | 0x00 |
| 0x8e | | | 0x00 | 0x53 or 0x50 |
| 0x8f | | | 0x00 | 0x00 |

**Table 7-15. EEPROM Address Map**

| Address | Field | Description | QPIT Setting | Factory Setting |
|---|---|---|---|---|
| 0x90 | iProduct | | 0x00 | 0x74 or 0x58 |
| 0x91 | | | 0x00 | 0x00 |
| 0x92 | | | 0x00 | 0x6f or 0x20 |
| 0x93 | | | 0x00 | 0x00 |
| 0x94 | | | 0x00 | 0x72 or 0x53 |
| 0x95 | | | 0x00 | 0x00 |
| 0x96 | | | 0x00 | 0x61 or 0x74 |
| 0x97 | | | 0x00 | 0x00 |
| 0x98 | | | 0x00 | 0x67 or 0x6f |
| 0x99 | | | 0x00 | 0x00 |
| 0x9a | | | 0x00 | 0x65 or 0x72 |
| 0x9b | | | 0x00 | 0x00 |
| 0x9c | | | 0x00 | 0x20 or 0x61 |
| 0x9d | | | 0x00 | 0x00 |

**Table 7-15. EEPROM Address Map**

| Address | Field | Description | QPIT Setting | Factory Setting |
|---|---|---|---|---|
| 0x9e | iProduct | | 0x00 | 0x20 or 0x67 |
| 0x9f | | | 0x00 | 0x00 |
| 0xa0 | | | 0x00 | 0x65 |
| 0xa1 | | | 0x00 | 0x00 |
| 0xa2 | | | 0x00 | 0x00 |
| 0xa3 | | | 0x00 | 0x00 |
| 0xa4 | | | 0x00 | 0x00 |
| 0xa5 | | | 0x00 | 0x00 |
| 0xa6 | | | 0x00 | 0x00 |
| 0xa7 | | | 0x00 | 0x00 |
| 0xa8 | | | 0x00 | 0x00 |
| 0xa9 | | | 0x00 | 0x00 |
| 0xaa | | | 0x00 | 0x00 |
| 0xab | | | 0x00 | 0x00 |
| 0xac | | | 0x00 | 0x00 |
| 0xad | | | 0x00 | 0x00 |
| 0xae | | | 0x00 | 0x00 |
| 0xaf | | | 0x00 | 0x00 |
| 0xb0 | iSerial | Strings of iSerial descriptor in the USB Storage calss(2) | 0x00 | (1) |
| 0xb1 | | ASCII code, terminated by NULL, Max 12 characters | 0x00 | 0x00 |
| 0xb2 | | | 0x00 | (1) |
| 0xb3 | | | 0x00 | 0x00 |
| 0xb4 | | | 0x00 | (1) |

**Table 7-15. EEPROM Address Map**

| Address | Field | Description | QPIT Setting | Factory Setting |
|---|---|---|---|---|
| 0xb5 | iSerial | | 0x00 | 0x00 |
| 0xb6 | | | 0x00 | (1) |
| 0xb7 | | | 0x00 | 0x00 |
| 0xb8 | | | 0x00 | (1) |
| 0xb9 | | | 0x00 | 0x00 |
| 0xba | | | 0x00 | (1) |
| 0xbb | | | 0x00 | 0x00 |
| 0xbc | | | 0x00 | (1) |
| 0xbd | | | 0x00 | 0x00 |
| 0xbe | | | 0x00 | (1) |
| 0xbf | | | 0x00 | 0x00 |
| 0xc0 | | | 0x00 | (1) |
| 0xc1 | | | 0x00 | 0x00 |
| 0xc2 | | | 0x00 | (1) |
| 0xc3 | | | 0x00 | 0x00 |
| 0xc4 | | | 0x00 | (1) |
| 0xc5 | | | 0x00 | 0x00 |
| 0xc6 | | | 0x00 | (1) |
| 0xc7 | | | 0x00 | 0x00 |
| 0xc8 | | | 0x00 | 0x00 |
| 0xc9 | | | 0x00 | 0x00 |
| 0xca | Interface descriptor | The value of Device descriptor for USB Mass Storage Class. (bInterfaceClass, bInterfaceSubClass, bInterfaceProtocol) 0x00: Vendor specific device / 0x01: Standard device | 0x00 | 0x00 |
| 0xcb | Reserved | | 0x00 | 0x00 |

**Table 7-15. EEPROM Address Map**

| Address | Field | Description | QPIT Setting | Factory Setting |
|---|---|---|---|---|
| 0xcc | Write Protect | Allow or prevent the write operetion to the PCMCIA<br>0x00: write enabled / 0x01: write disabled | 0x00 | 0x00 |
| 0xcd | Reserved | | 0x00 | 0x00 |
| 0xce | | | 0x00 | 0x00 |
| 0xcf | | | 0x00 | 0x00 |
| 0xd0 | Region Code | 0x00: Japan / 0x01: US / 0x02: Euro, Asia | 0x00 | 0x01 |
| 0xd1 | Panel Settings | Initial setting for “All” print mode (1)<br>Upper 4bits: Default of Paper Type<br>0x00: Premium Glossy Photo Paper, 0x10: Photo Quality Ink Jet Paper, 0x20: Plain Paper, 0x30: Photo Paper, 0x40: Matte Paper<br>Heavyweight<br>Lower 4bits: Default of Paper Size<br>0x00: 89mm Roll, 0x01: 127mm Roll, 0x02: 4” Roll,<br>0x03: 210mmRoll, 0x04: 4x6, 0x05:Letter, 0x06: 5x7, 0x07: 8x10 | 0x00 | 0x00 |
| 0xd2 | | Initial setting for “All” print mode (2)<br>Upper 4bits: Default of Page Layout<br>0x00: Full-bleed, 0x10:Single, 0x20: Double, 0x30: Quarter, 0x40: Triple, 0x50:20<br>Lower 4bits : Default of Quality<br>0x00: High, 0x01: Normal | 0x00 | 0x00 |
| 0xd3 | | Initial setting for “All” print mode<br>Upper 4bits: Default of PhotoEnhance:0x00: On, 0x10: Off<br>Lower 4bits:Reserved (Don’t care) | 0x00 | 0x00 |

**Table 7-15. EEPROM Address Map**

| Address | Field | Description | QPIT Setting | Factory Setting |
|---|---|---|---|---|
| 0xd4 | Panel Settings | Initial setting for “Index” print mode (1)<br>Upper 4bits: Default of Paper Type<br>0x00: Premium Glossy Photo Paper, 0x10: Photo Quality Ink Jet Paper, 0x20: Plain Paper, 0x30: Photo Paper, 0x40: Matte Paper<br>Heavyweight<br>Lower 4bits: Default of Paper Size<br>0x00: 89mm Roll, 0x01: 127mm Roll, 0x02: 4” Roll,<br>0x03: 210mmRoll, 0x04: 4x6, 0x05: Letter, 0x06: 5x7, 0x07: 8x10 | 0x00 | 0x25 |
| 0xd5 | | Initial setting for “Index” print mode (2)<br>Upper 4bits:Default of Page Layout<br>0x00: Full-bleed, 0x10: Single, 0x20: Double, 0x30: Quarter, 0x40: Triple, 0x50: 20<br>Lower 4bits: Default of Quality<br>0x00: High, 0x01: Normal | 0x00 | 0x01 |
| 0xd6 | | Initial setting for “Index” print mode<br>Upper 4bits: Default of PhotoEnhance: 0x00: On, 0x10: Off<br>Lower 4bits: Reserved (Don’t care) | 0x00 | 0x10 |
| 0xd7 | | Initial setting for “One” print mode (1)<br>Upper 4bits: Default of Paper Type<br>0x00: Premium Glossy Photo Paper, 0x10: Photo Quality Ink Jet Paper, 0x20: Plain Paper, 0x30:Photo Paper, 0x40: Matte Paper<br>Heavyweight<br>Lower 4bits: Default of Paper Size<br>0x00: 89mm Roll, 0x01: 127mm Roll, 0x02: 4” Roll,<br>0x03: 210mmRoll, 0x04: 4x6, 0x05: Letter, 0x06: 5x7, 0x07: 8x10 | 0x00 | 0x00 |

**Table 7-15. EEPROM Address Map**

| Address | Field | Description | QPIT Setting | Factory Setting |
|---|---|---|---|---|
| 0xd8 | Panel Settings | Initial setting for “One” print mode (2)<br>Upper 4bits: Default of Page Layout<br>0x00: Full-bleed, 0x10: Single, 0x20: Double, 0x30: Quarter, 0x40: Triple, 0x50: 20<br>Lower 4bits:Default of Quality<br>0x00:High, 0x01:Normal | 0x00 | 0x00 |
| 0xd9 | | Initial setting for “One” print mode<br>Upper 4bits: Default of PhotoEnhance: 0x00: On, 0x10: Off<br>Lower 4bits: Reserved (Don’t care) | 0x00 | 0x00 |
| 0xda | | Initial setting for “Set” print mode (1)<br>Upper 4bits: Default of Paper Type<br>0x00: Premium Glossy Photo Paper, 0x10: Photo Quality Ink Jet Paper, 0x20: Plain Paper, 0x30: Photo Paper, 0x40: Matte Paper<br>Heavyweight<br>Lower 4bits: Default of Paper Size<br>0x00: 89mm Roll, 0x01: 127mm Roll, 0x02: 4” Roll, 0x03: 210mmRoll, 0x04: 4x6, 0x05: Letter, 0x06: 5x7, 0x07: 8x10 | 0x00 | 0x00 |
| 0xdb | | Initial setting for “Set” print mode (2)<br>Upper 4bits: Default of Page Layout<br>0x00: Full-bleed, 0x10: Single, 0x20: Double, 0x30: Quarter, 0x40: Triple, 0x50: 20<br>Lower 4bits: Default of Quality<br>0x00: High, 0x01: Normal | 0x00 | 0x00 |
| 0xdc | | Initial setting for “Set” print mode<br>Upper 4bits: Default of PhotoEnhance: 0x00: On, 0x10: Off<br>Lower 4bits: Reserved (Don’t care) | 0x00 | 0x00 |
| 0xdd | Reserved | | 0x00 | 0x00 |
| 0xde | | | 0x00 | 0x00 |

**Table 7-15. EEPROM Address Map**

| Address | Field | Description | QPIT Setting | Factory Setting |
|---|---|---|---|---|
| 0xdf | Reserved | | 0x00 | 0x00 |
| 0xe0 | Detailed environment | Trimming<br>0x00: Enabled / 0x01: Disabled | 0x00 | 0x00 |
| 0xe1 | | Cutting marker<br>0x00: do not print / 0x01: print | 0x00 | 0x00 |
| 0xe2 | | Date format<br>0x00: yyyy.mm.dd / 0x01: mm.dd.yyyy / 0x02: dd.mm.yyyy /<br>0x03: mmm.dd.yyyy / 0x04: dd.mmm.yyyy / 0x05: ‘yy.mm.dd /<br>0x06: mm.dd.’yy / 0x07: dd.mm.’yy | 0x00 | 0x00 |
| 0xe3 | | Time format<br>0x00: 12hour / 0x01: 24hour | 0x00 | 0x00 |
| 0xe4 | | 0xe4 Camera information<br>0x00: do not print / 0x01: print | 0x00 | 0x00 |
| 0xe5 | Reserved | | 0x00 | 0x00 |
| 0xe6 | Print position adjustment for sticker print | Vertical adjustment (360dpi Unit, -5~+5) | 0x00 | 0x00 |
| 0xe7 | | Horizontal adjustment (360dpi Unit, -5~+5) | 0x00 | 0x00 |
| 0xe8 | Reserved | | 0x00 | 0x00 |
| 0xe9 | | | 0x00 | 0x00 |
| 0xea | | | 0x00 | 0x00 |
| 0xeb | | | 0x00 | 0x00 |
| 0xec | | | 0x00 | 0x00 |
| 0xed | | | 0x00 | 0x00 |
| 0xee | | | 0x00 | 0x00 |
| 0xef | | | 0x00 | 0x00 |

**Table 7-15. EEPROM Address Map**

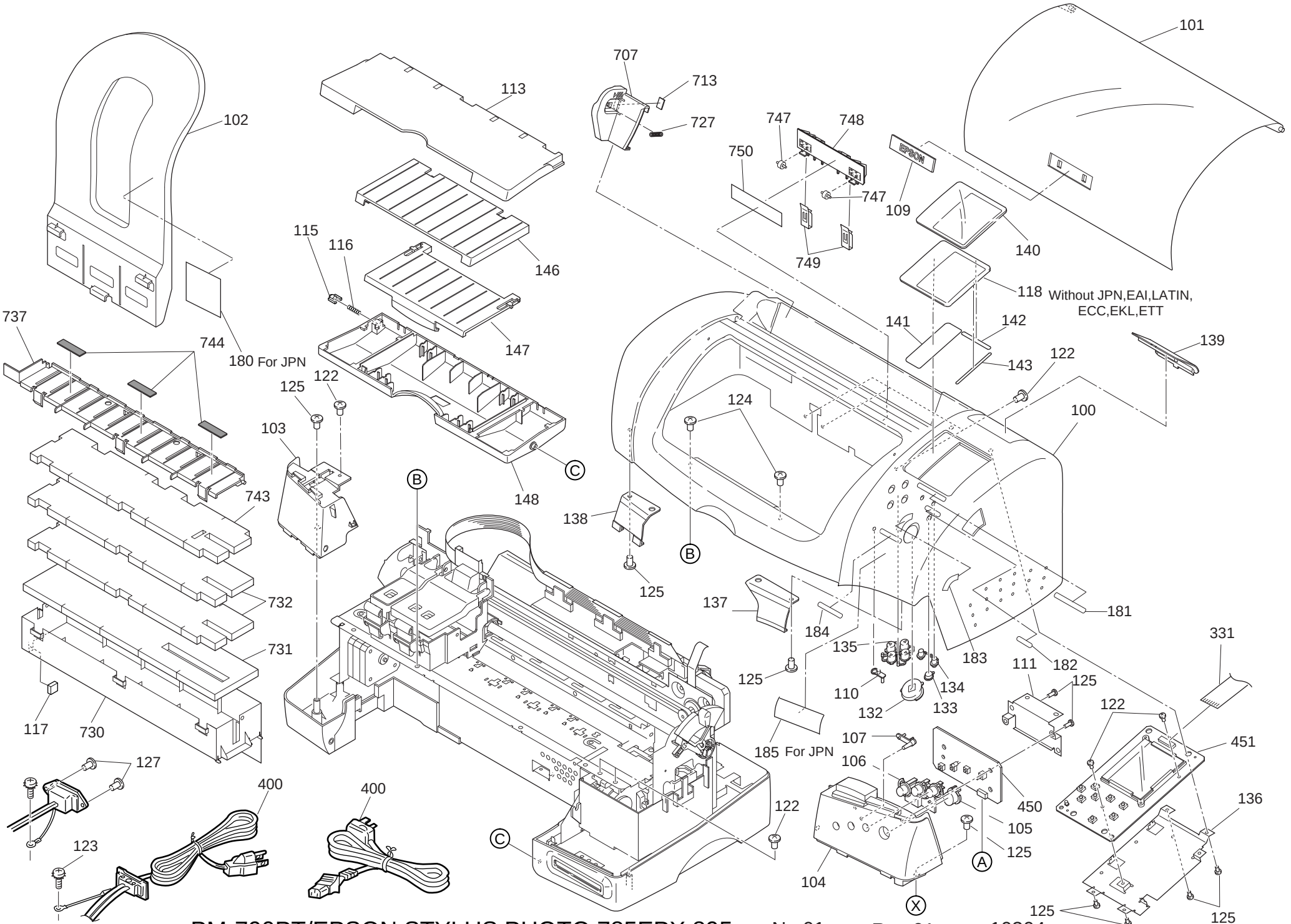
| Address | Field | Description | QPIT Setting | Factory Setting |
|---|---|---|---|---|
| 0xf0 | Reserved | | 0x00 | 0x00 |
| 0xf1 | | | 0x00 | 0x00 |
| 0xf2 | | | 0x00 | 0x00 |
| 0xf3 | | | 0x00 | 0x00 |
| 0xf4 | | | 0x00 | 0x00 |
| 0xf5 | | | 0x00 | 0x00 |
| 0xf6 | | | 0x00 | 0x00 |
| 0xf7 | | | 0x00 | 0x00 |
| 0xf8 | | | 0x00 | 0x00 |
| 0xf9 | | | 0x00 | 0x00 |
| 0xfa | | | 0x00 | 0x00 |
| 0xfb | | | 0x00 | 0x00 |
| 0xfc | | | 0x00 | 0x00 |
| 0xfd | | | 0x00 | 0x00 |
| 0xfe | | | 0x00 | 0x00 |
| 0xff | | | 0x00 | 0x00 |

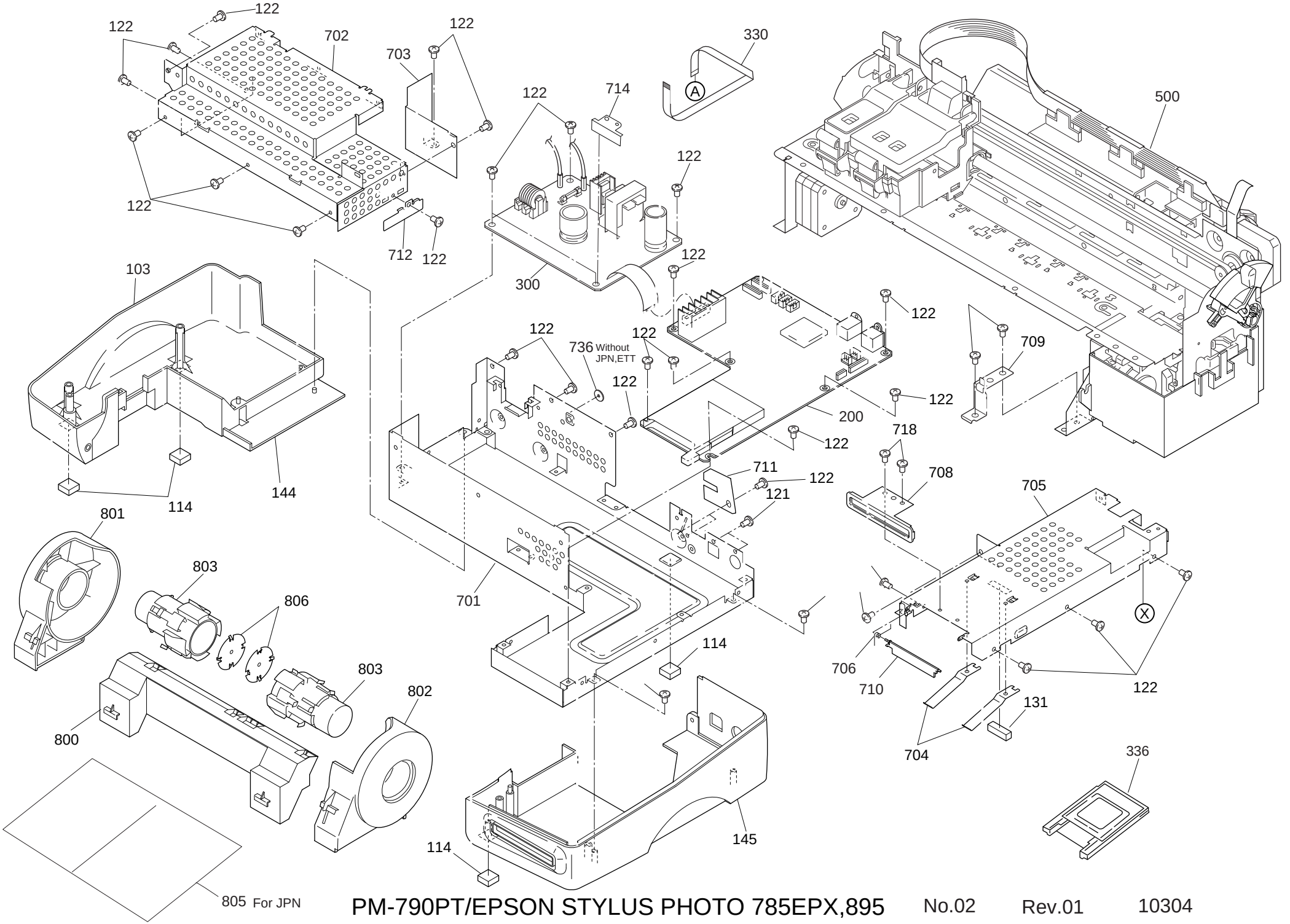
***NOTE:***

(1) When the value in 0x80 address is 0xFF or 0x00, use the value listed in the Factory settings column as the initial value.

(2) Use the specific value to the product. Available characters are '0' to '9' and 'A' to 'Z'.

## 7.2 Exploded Diagram


101
102
113
707
713
727
747
748
750
747
749
109
EPSON
140
118
Without JPN,EAI,LATIN,
ECC,EKL,ETT
141
142
143
139
122
100
124
146
115
116
147
148
122
125
103
138
125
B
C
737
744
180 For JPN
743
732
731
117
730
137
184
135
125
110
132
134
133
183
182
181
185 For JPN
111
125
331
122
451
107
106
450
105
125
104
A
X
136
125
125
127
123
400
400
122
PM-790PT/EPSON STYLUS PHOTO 785EPX,895
No.01
Rev.01
10304

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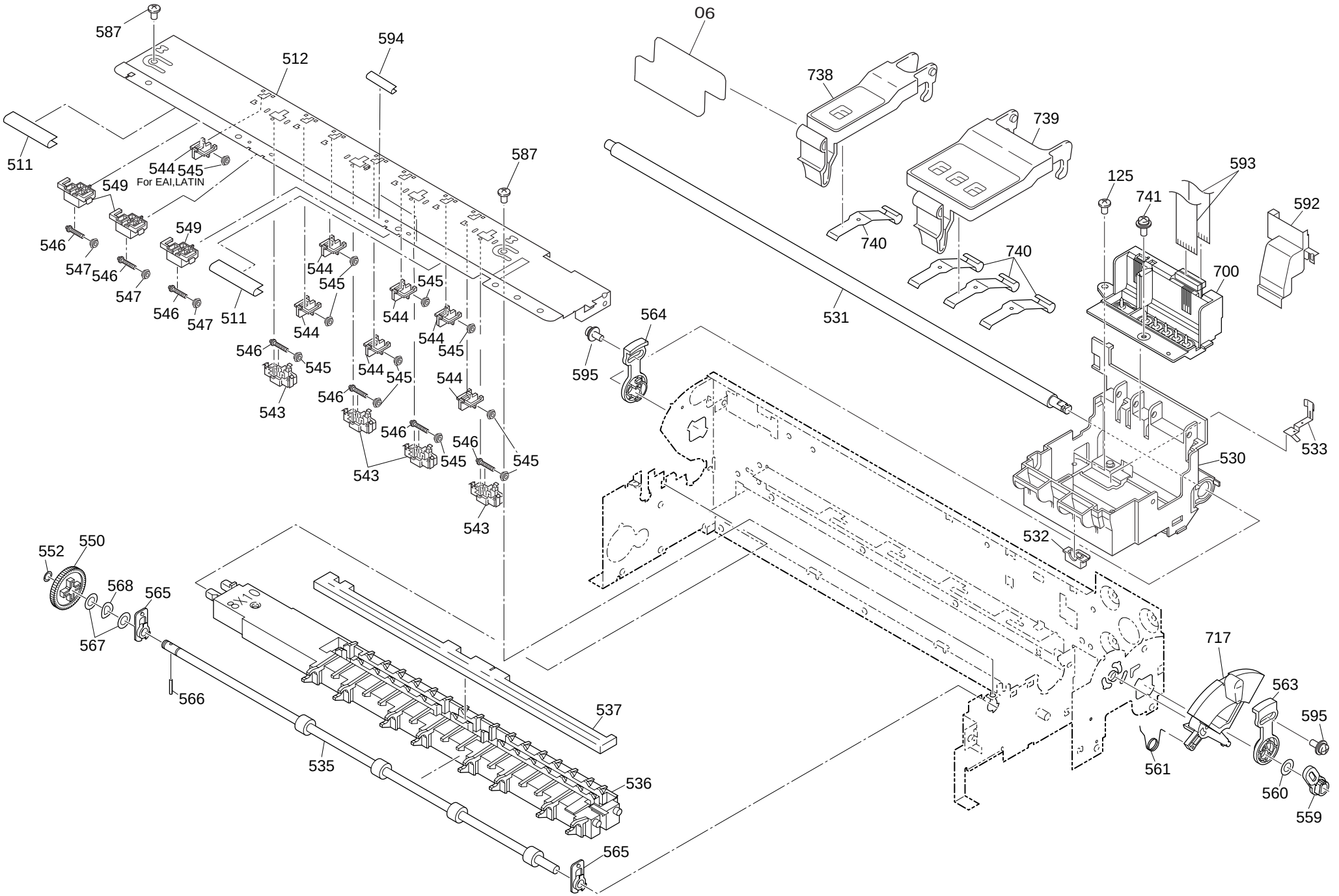


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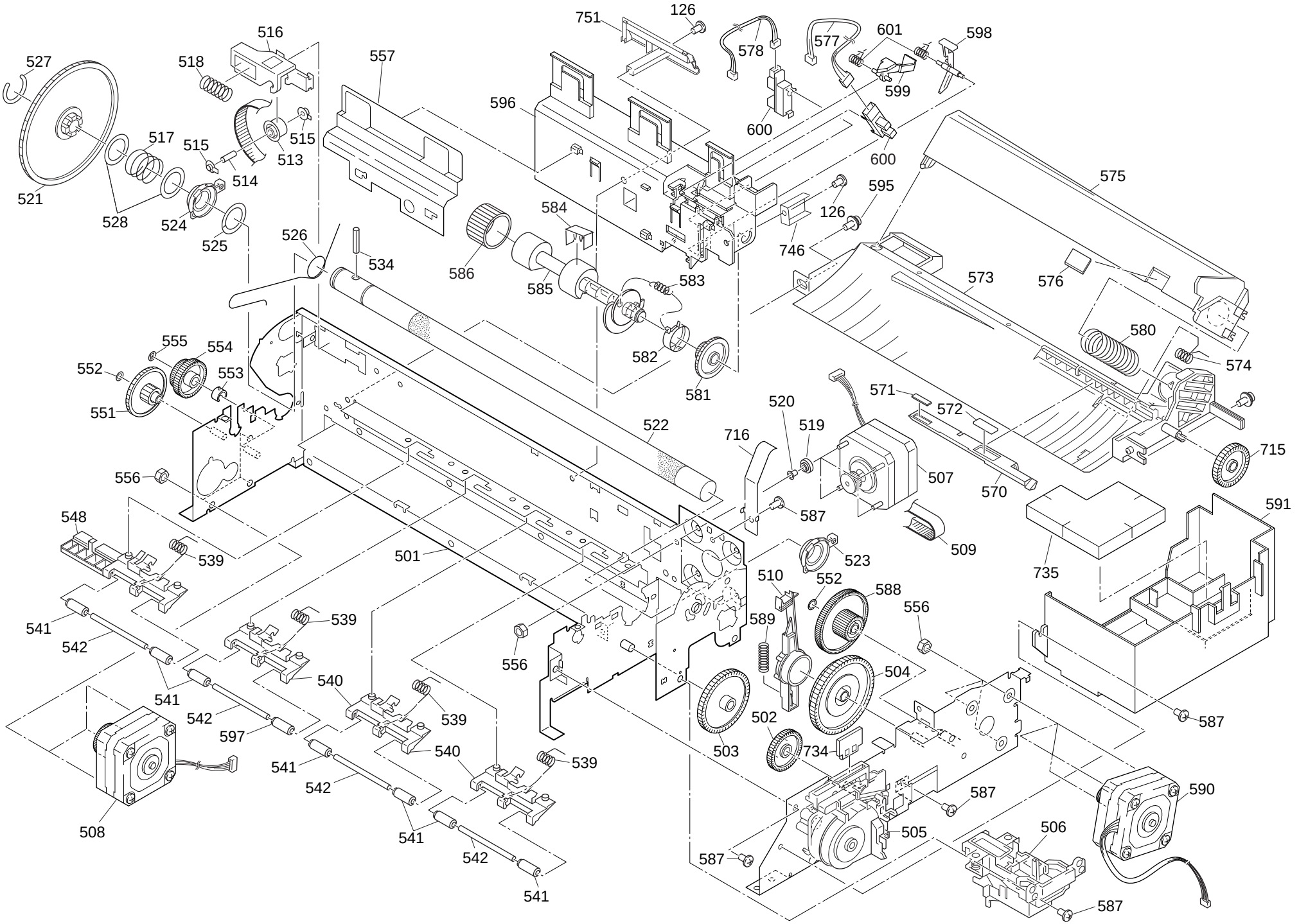


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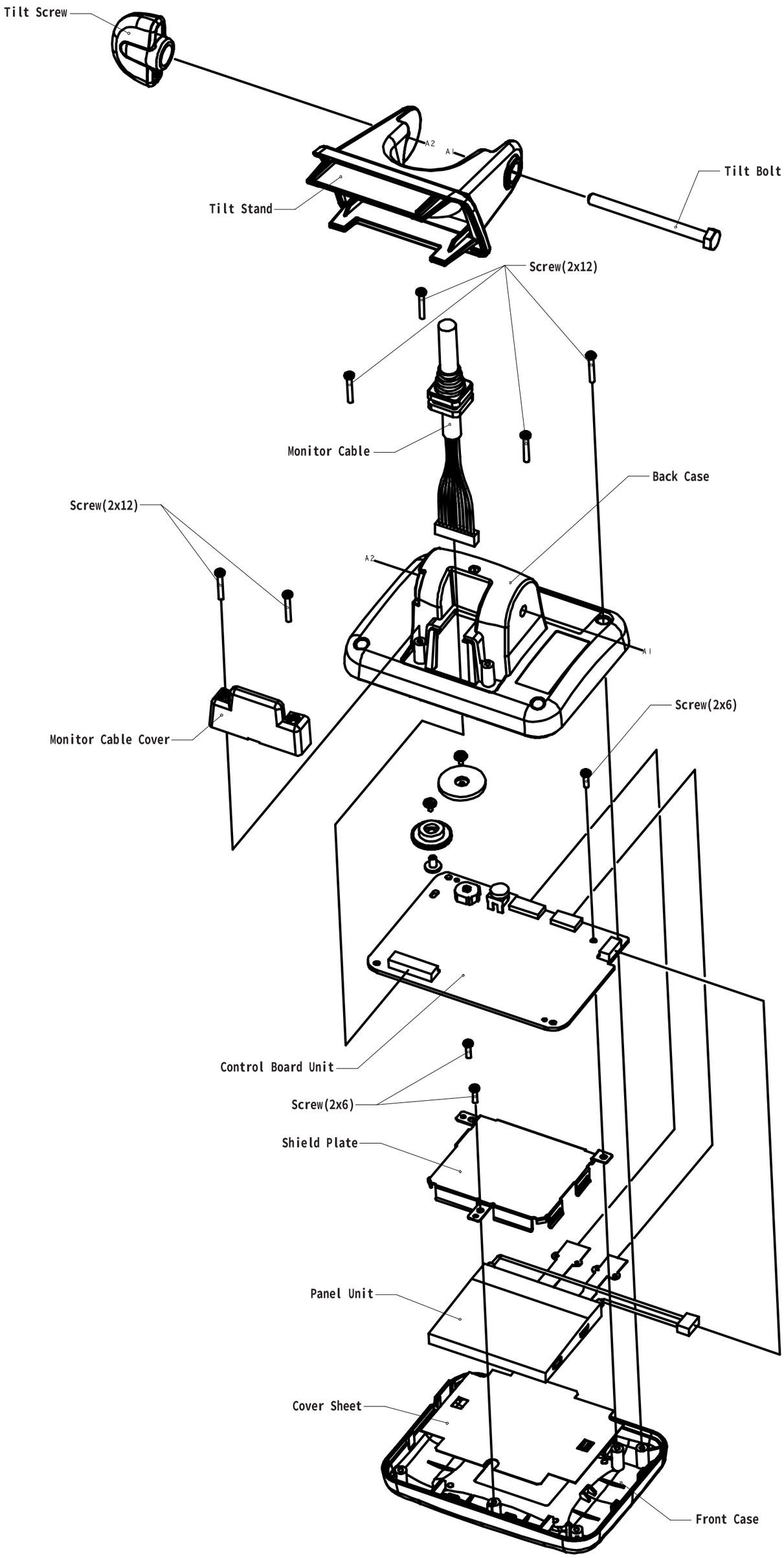
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A1
Tilt Bolt
Tilt Stand
Screw(2x12)
Monitor Cable
Back Case
Screw(2x12)
A2
A1
Screw(2x6)
Monitor Cable Cover
Control Board Unit
Screw(2x6)
Shield Plate
Panel Unit
Cover Sheet
Front Case

# 7.3 Parts List

**Table 7-16. Parts List**

| Code | Name |
|---|---|
| 100 | HOUSING |
| 101 | "COVER,PRINTER" |
| 102 | PAPER SUPPORT;B;ENB-7 |
| 103 | "HOUSING,PANEL,LEFT" |
| 104 | "HOUSING,PANEL,RIGHT;B" |
| 105 | "BUTTON,PS" |
| 106 | "BUTTON,THREE TYPE" |
| 107 | LENS |
| 109 | LOGO PLATE 10X40;C |
| 110 | "OPTICAL TUBE,ACCESS" |
| 111 | "SHIELD PLATE,PANEL" |
| 113 | STACKER |
| 114 | FOOT |
| 115 | "LOCK,STACKER;B" |
| 116 | "COMPRESSION SPRING,2.94" |
| 117 | FOOT |
| 121 | C.P.SCREW |
| 122 | C.B.S. SCREW |
| 123 | "C.B.(O) SCREW,4X5,F/ZG" |
| 124 | "C,B,S-TITE R.SCREW,3X6,F/UC" |
| 125 | "C.B.P-TITE SCREW,3X8,F/ZN" |
| 126 | C.B.S. SCREW |
| 131 | "GASKET,PC CARD" |
| 132 | "BUTTON,PRINT START" |
| 133 | "BUTTON,STOP" |

**Table 7-16. Parts List**

| Code | Name |
|---|---|
| 134 | "BUTTON,FRAME" |
| 135 | "BUTTON,CROSS KEY" |
| 136 | "SHIELD PLATE,PANEL,LCD;B" |
| 137 | "HOUSING,PANEL,SUPPORT,RIGHT" |
| 138 | "HOUSING,PANEL,SUPPORT,LEFT" |
| 139 | "COVER,COLOR LCD" |
| 140 | "COVER,LCD;C" |
| 141 | "TAPE,21X62" |
| 142 | "TAPE,4X36" |
| 143 | "TAPE,3.5X50" |
| 144 | "HOUSING,SUPPORT,LEFT" |
| 145 | "HOUSING,SUPPORT,RIGHT" |
| 146 | "STACKER,SUPPORT,MIDDLE;B" |
| 147 | "STACKER,SUPPORT,LOWER;B" |
| 148 | "STACKER,SUPPORT,UPPER" |
| 181 | "SHEET,LCD;B" |
| 182 | "SHEET,LCD,UPPER;B" |
| 183 | "SHEET,LCD,MIDDLE;B" |
| 184 | "SHEET,LCD,LOWER;B" |
| 200 | "BOARD ASSY., MAIN" |
| 300 | "BOARD ASSY.,POWER" |
| 330 | WIRE HARNESS |
| 331 | WIRE HARNESS |
| 336 | COMPACT FLASH ADAPTER |
| 450 | "BOARD ASSY.,PANEL" |
| 451 | "BOARD ASSY.,PANEL" |

**Table 7-16. Parts List**

| Code | Name |
|---|---|
| 500 | "PRINTER MECHANISM(ASP),M-A210-101" |
| 501 | "FRAME ASSY.,MAIN;C" |
| 502 | "COMBINATION GEAR,9.6,24" |
| 503 | "SPUR GEAR,36.8" |
| 504 | "COMBINATION GEAR,37.6,44.4" |
| 505 | PUMP ASSY |
| 506 | CAP ASSY.;B |
| 507 | "MOTOR ASSY.,CR" |
| 508 | "MOTOR ASSY.,PF" |
| 509 | TIMING BELT |
| 510 | "LEVER,CHANGE" |
| 511 | "SHEET,PROTECTION" |
| 512 | "FRAME,FRONT;C" |
| 513 | "PULLEY,DRIVEN" |
| 514 | "SHAFT,PULLEY,DRIVEN" |
| 515 | "BUSHING,PULLEY,DRIVEN" |
| 516 | "HOLDER,PULLEY,DRIVEN" |
| 517 | "COMPRESSION SPRING,5.85" |
| 518 | "COMPRESSION SPRING,19.6" |
| 519 | "INSULATOR,MOTOR,CR" |
| 520 | "SPACER,INSULATOR" |
| 521 | "SPURGEAR,73.6" |
| 522 | "ROLLER,PF" |
| 523 | "BUSH,ROLLER,PF;B" |
| 524 | "BUSH,ROLLER,PF,LEFT;B" |
| 525 | "SPACER,FASTEN,ROLLER,PF" |

**Table 7-16. Parts List**

| Code | Name |
|---|---|
| 526 | "GROUNDINGWIRE,PF" |
| 527 | C-RING |
| 528 | "PLANE WASHER,12.2X0.5X15" |
| 530 | CARRIAGE;C |
| 531 | "SHAFT,CR,GUIDE" |
| 532 | "SLIDER,CR" |
| 533 | "GROUNDING PLATE,HEAD" |
| 534 | "SCALLOP SPRING PIN-AW,2X16,F/B" |
| 535 | "ROLLER,ASSY.,EJ" |
| 536 | "PAPER GUIDE,FRONT;B" |
| 537 | "POROUS PAD,PAPER GUIDE,FRONT;B" |
| 539 | "TORSION SPRING,87.9" |
| 540 | "PAPERGUIDE,UPPER" |
| 541 | "ROLLER,DRIVEN" |
| 542 | "SHAFT,ROLLER,DRIVEN" |
| 543 | "HOLDER,STARWHEEL,FRONT" |
| 544 | "HOLDER,STARWHEEL,REAR" |
| 545 | "STARWHEEL ASSY.,8" |
| 546 | "ROD SPRING,STAR WHEEL" |
| 547 | "STARHWEEL,8;B" |
| 548 | "PAPER GUIDE,LEFT" |
| 549 | "HOLDER,STAR WHEEL,EJ" |
| 550 | "SPUR GEAR,25.6" |
| 551 | "COMBINATION GEAR,11.6,36.8" |
| 552 | "PLANE WASHER,4.1X0.5X6.5" |
| 553 | "BUSHING,FASTEN,COMBINATION GEAR" |

**Table 7-16. Parts List**

| Code | Name |
|---|---|
| 554 | "COMBINATION GEAR,16,21.6" |
| 555 | "PUSHING NUT,2" |
| 556 | "HEXAGON NUT,NORMAL,M3" |
| 557 | "GROUNDING PLATE,HEAD FFC" |
| 559 | "LEVER,PG,SUPPORT" |
| 560 | LEAF SPRING |
| 561 | "TORSION SPRING,63.7" |
| 563 | "BUSHING,PALLARELIZM ADJUST,RIGHT" |
| 564 | "BUSHING,PALLARELIZM ADJUST,LEFT" |
| 565 | "BUSHING,5" |
| 566 | "SCALLOP S.P SP-AW,1.6X10,F/B" |
| 567 | "PLANE WASHER,5.2X0.2X10,S/NA" |
| 568 | "U-TYPE SPRING,5.2X0.13X10,S/NA" |
| 570 | "HOLDER,PAD" |
| 571 | "PAD,LD;D" |
| 572 | "PAD,LD,SMALL" |
| 573 | "FRAME,ASF" |
| 574 | "TORSION SPRING,36.8" |
| 575 | HOPPER |
| 576 | "PAD,HOPPER" |
| 577 | "HARNESS,DETECTOR" |
| 578 | "HARNESS,DETECTOR,PE" |
| 580 | "COMPRESSION SPRING,4.80" |
| 581 | "SPUR GEAR,35.2" |
| 582 | CLUTCH |
| 583 | "EXTENSION SPRING,0.143" |

**Table 7-16. Parts List**

| Code | Name |
|---|---|
| 584 | "SHAFT,ROLLER,LD,SUPPORT" |
| 585 | "SHAFT,ROLLER,LD;B" |
| 586 | "ROLLER,LD" |
| 587 | C.B.S. SCREW |
| 588 | "COMBINATION GEAR,14.4,38.4" |
| 589 | "COMPRESSION SPRING,2.94;B" |
| 590 | "MOTOR ASSY.,ASF" |
| 591 | "TRAY,IS" |
| 592 | "HOLDER,CABLE HEAD;B" |
| 593 | "CABLE,HEAD" |
| 594 | "SHEET,PROTECTION;SMALL" |
| 595 | "C.B.S-TITE(P4),3X6,F/ZN" |
| 596 | "HOLDER,SHAFT" |
| 597 | "ROLLER,DRIVEN" |
| 598 | "LEVER,DETECTOR,PE" |
| 599 | "LEVER,DETECTOR,HP" |
| 600 | "DETECTOR,HP;C" |
| 601 | "TORSIONSPRING,0.22" |
| 700 | PRINT HEAD |
| 701 | "SHIELD PLATE,M/B" |
| 702 | "SHIELD PLATE,M/B,UPPER" |
| 703 | "COVER,SHIELD PLATE,M/B" |
| 704 | "GROUNDING PLATE,PC CARD" |
| 705 | "SHIELD PLATE,P/B,UPPER" |
| 706 | "SPRING,SHUTTER,PC CARD" |
| 707 | EDGE GUIDE;B |

**Table 7-16. Parts List**

| Code | Name |
|---|---|
| 708 | "HOUSING SUPPORT,PC CARD" |
| 709 | "SHIELD PLATE,P/B,SUPPORT" |
| 710 | "CAVER,PC CARD" |
| 711 | "REINFORCEMENTPLATE,HOUSING,SUPPORT" |
| 712 | "SHIELD PLATE,M/B,SUPPORT" |
| 713 | "PAD,BRAKE,EDGE GUIED" |
| 714 | "COVER,SHIEALD PLATE" |
| 715 | "SPUR GEAR,23.2" |
| 716 | "GROUNDING PLATE,LCD" |
| 717 | "LEVER,PG" |
| 718 | "C.P.SCREW,3X4,F/ZN" |
| 727 | "COMPRESSION SPRING,7.77" |
| 730 | "TRAY,POROUS PAD" |
| 731 | "POROUS PAD,INK EJECT,LOWER;B" |
| 732 | "POROUS PAD,INK EJECT,MIDDLE;B" |
| 734 | "CLEANER HEAD,ASP" |
| 735 | "POROUS PAD,INK EJECT,CAP,LOWER;D" |
| 736 | HEXAGON NUT |
| 737 | "PAPER GUIDE,LOWER" |
| 738 | "COVER,CARTRIDGE,BK;B" |
| 739 | "COVER,CARTRIDGE,C;B" |
| 740 | "PLATE SPRING,COVER,CARTRIDGE" |
| 741 | "+.BIND B-TITE SEMS W2,2.5X5,F/ZB" |
| 743 | "POROUS PAD,INK EJECT,UPPER;B" |
| 744 | "STOPPER,PAPER GUIDE,LOWER" |
| 746 | "SUPPORT PLATE,HOLDER SHAFT;B" |

**Table 7-16. Parts List**

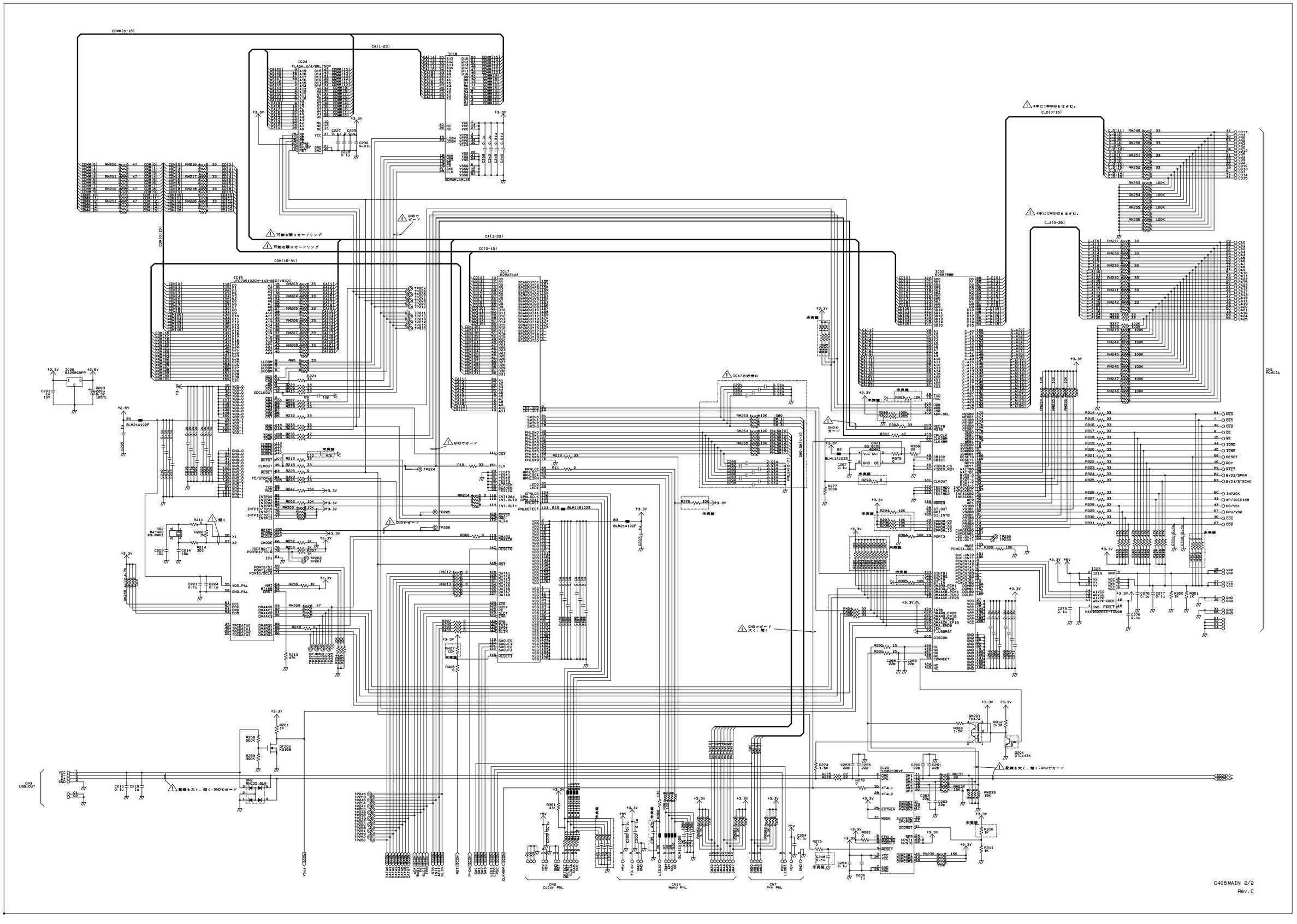
| Code | Name |
|---|---|
| 747 | IDLE ROLLER |
| 748 | "HOLDER,IDLE ROLLER" |
| 749 | "SPRING,HOLDER,IDLE ROLLER" |
| 750 | "DOUBLE SIDED TAPE,88X20" |
| 751 | "COVER,ROLLER,LD" |
| 800 | "MOUNTING PLATE,ROLL PAPER HOLDER" |
| 801 | "FRAME,ROLL PAPER,LEFT;B" |
| 802 | "FRAME,ROLL PAPER,RIGHT;B" |
| 803 | "STOPPER,ROLL PAPER;B" |
| 806 | "SUPPORT PLATE,STOPPER,ROLL PAPER" |

# 7.4 Electrical Circuits

The electric circuit diagrams below are shown at the following pages:

- C408 MAIN control circuit board (1/2)
- C408 MAIN control circuit board (2/2)
- C408PSB
- C408PSE
- C408 PNL circuit board
- C408PNL-B circuit board
- Preview monitor circuit board

C40BMAIN 1/2
Rev.C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CA[1-23]
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FLASH_2/4/8M_TSOP
IC18
SDRAM_16/64
CDM[0-15]
CDM[16-31]
CD[0-15]
IC15
LH52D5102GM-143-BE
IC17
E09A31AA
IC26
BA25BC0FP
IC2
E05B25BB
C_D[0-15]
C_A[0-25]
CN1
PCMCIA
IC1
CR2
MA-406
23.8MHz
X1
X2
IC23
MAX1602EEE-TD068
IC22
TUSB2036YF
CRU1
SG-8002
CN3
USB-OUT
DMC
1NV2D5.6LG
QF201
K2168
QM201
FMA7A
DT201
DTC143X
CN2
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Pen PNL
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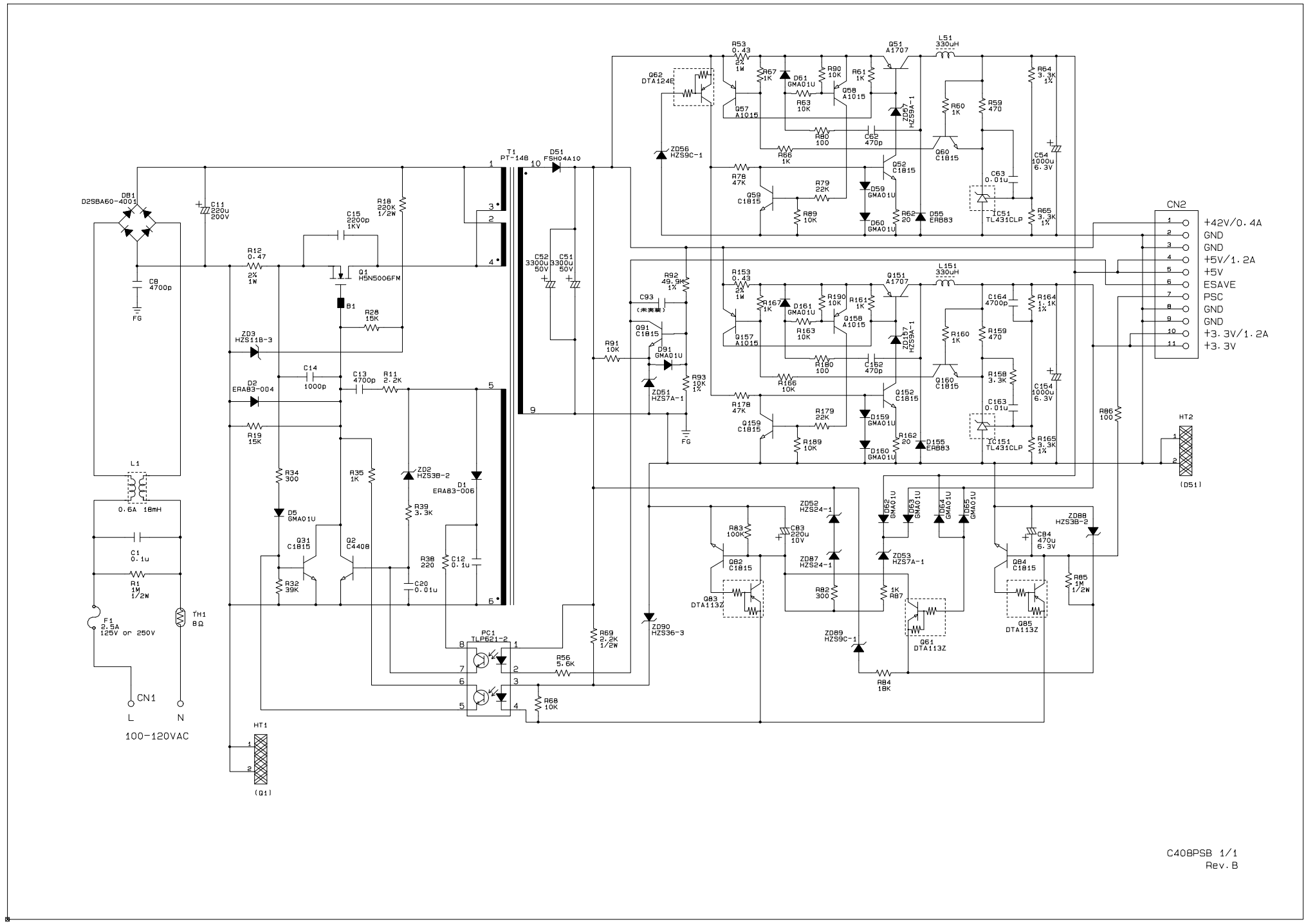
PNLSW[1-7]
C40BMAIN 2/2
Rev.C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G
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5
6
CN2
+42V/0.4A
GND
GND
+5V/1.2A
+5V
ESAVE
PSC
GND
GND
+3.3V/1.2A
+3.3V
CN1
L
N
100-120VAC
HT1
(Q1)
HT2
(D51)
T1
PT-148
D51
FSH04A10
DB1
D2SBA60-4001
C11
220u
200V
C15
2200p
1KV
R18
220K
1/2W
R12
0.47
2W
1W
Q1
H5N5006FM
B1
C8
4700p
FG
R28
15K
ZD3
HZS11B-3
D2
ERA83-004
C14
1000p
C13
4700p
R11
2.2K
R19
15K
L1
0.6A 18mH
C1
0.1u
R1
1M
1/2W
F1
2.5A
125V or 250V
TH1
8Ω
R34
300
R35
1K
ZD2
HZS3B-2
D1
ERA83-006
D5
GMA01U
R39
3.3K
Q31
C1815
Q2
C4408
R38
220
C12
0.1u
R32
39K
C20
0.01u
PC1
TLP621-2
R56
5.6K
R69
2.2K
1/2W
R68
10K
ZD90
HZS36-3
C52
3300u
50V
C51
3300u
50V
R92
49.9K
1%
C93
(未実装)
Q91
C1815
D91
GMA01U
R91
10K
R93
10K
1%
ZD51
HZS7A-1
R53
0.43
2W
1W
Q62
DTA124E
Q57
A1015
D61
GMA01U
R67
1K
R90
10K
R61
1K
Q58
A1015
R63
10K
Q51
A1707
L51
330uH
ZD57
HZS9A-1
R64
3.3K
1%
R60
1K
R59
470
R80
100
C62
470p
R66
1K
ZD56
HZS9C-1
Q60
C1815
C54
1000u
6.3V
R78
47K
Q52
C1815
C63
0.01u
Q59
C1815
R79
22K
D59
GMA01U
R89
10K
D60
GMA01U
R62
20
D55
ERB83
IC51
TL431CLP
R65
3.3K
1%
R153
0.43
2W
1W
Q151
A1707
L151
330uH
R167
1K
D161
GMA01U
R190
10K
R161
1K
C164
4700p
R164
1.1K
1%
Q158
A1015
R163
10K
Q157
A1015
ZD157
HZS9A-1
R160
1K
R159
470
R180
100
C162
470p
R166
10K
Q160
C1815
R158
3.3K
C154
1000u
6.3V
R178
47K
Q152
C1815
C163
0.01u
Q159
C1815
R179
22K
D159
GMA01U
D160
GMA01U
R162
20
D155
ERB83
IC151
TL431CLP
R165
3.3K
1%
R189
10K
R86
100
R83
100K
C83
220u
10V
ZD52
HZS24-1
ZD87
HZS24-1
D62
GMA01U
D63
GMA01U
D64
GMA01U
D65
GMA01U
ZD88
HZS3B-2
C84
470u
6.3V
Q82
C1815
ZD53
HZS7A-1
R87
1K
Q83
DTA113Z
R82
300
Q84
C1815
R85
1M
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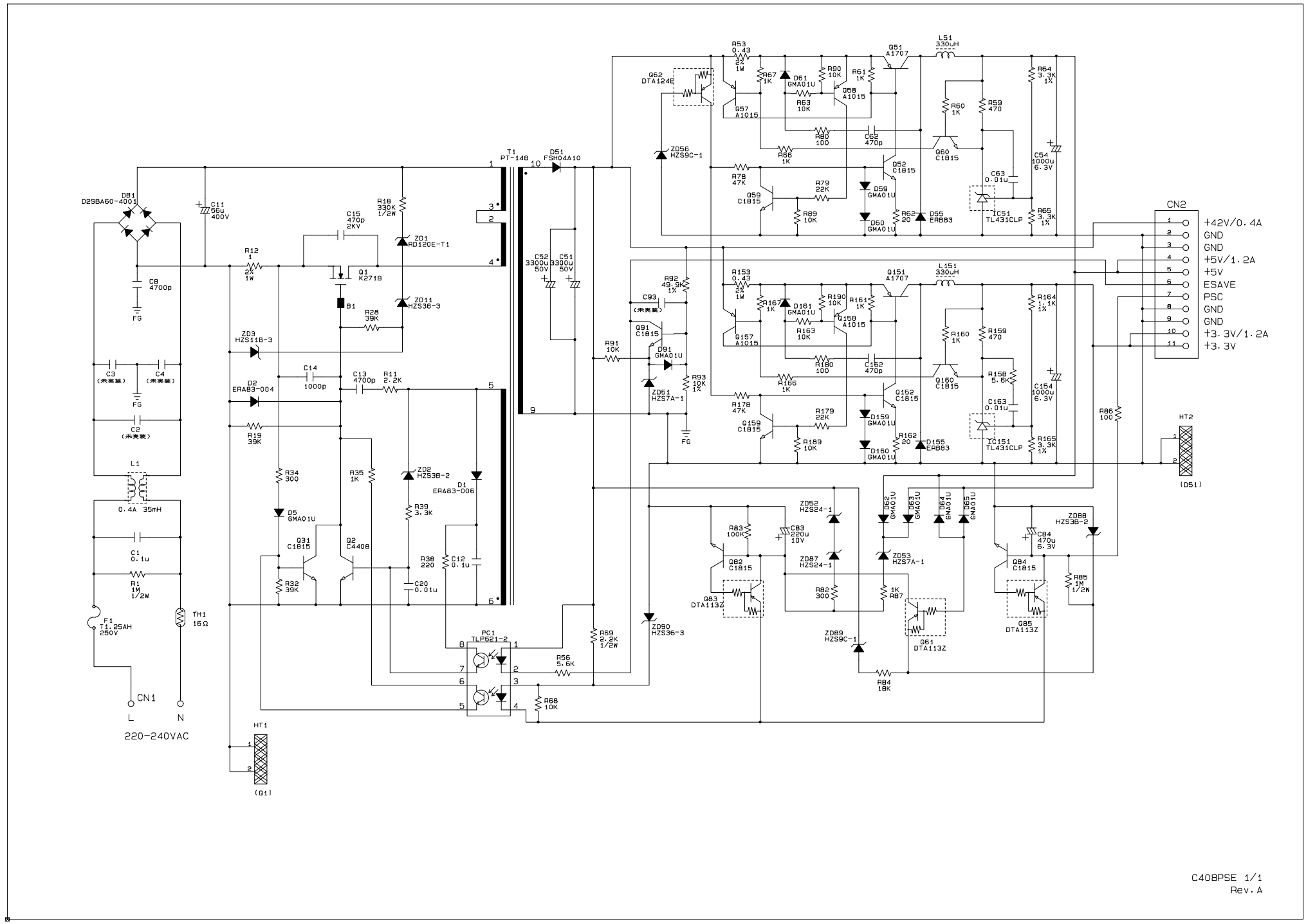
18K
C408PSB 1/1
Rev.B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B
C
D
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5
6
DB1
D2SBA60-4001
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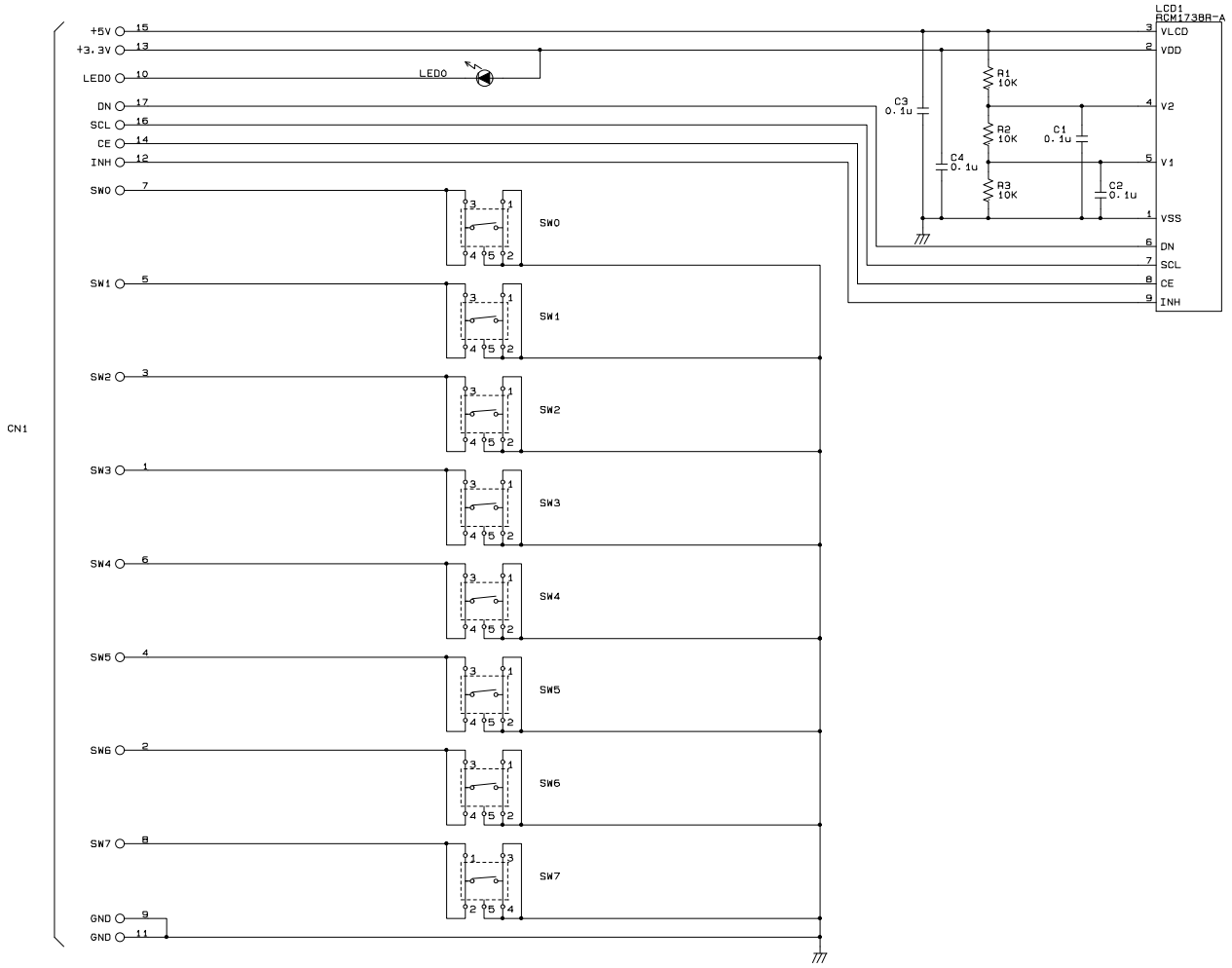
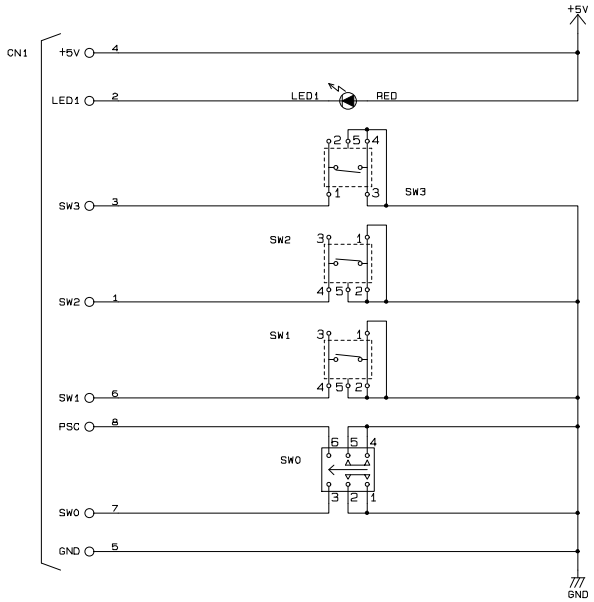
400V
C8
4700p
FG
C3
(未実装)
C4
(未実装)
C2
(未実装)
L1
0.4A 35mH
C1
0.1u
R1
1M
1/2W
F1
T1.25AH
250V
TH1
15Ω
CN1
L
N
220-240VAC
R12
1
2%
1W
C15
470p
2KV
R18
330K
1/2W
ZD1
RD120E-T1
Q1
K2718
B1
R28
39K
ZD11
HZS36-3
ZD3
HZS11B-3
D2
ERA83-004
C14
1000p
C13
4700p
R11
2.2K
R19
39K
R34
300
R35
1K
ZD2
HZS3B-2
D1
ERA83-006
D5
GMA01U
Q31
C1815
Q2
C4408
R39
3.3K
R38
220
C12
0.1u
C20
0.01u
R32
39K
HT1
(Q1)
T1
PT-148
D51
FSH04A10
C52
3300u
50V
C51
3300u
50V
PC1
TLP621-2
R56
5.6K
R69
2.2K
1/2W
R68
10K
ZD90
HZS36-3
R91
10K
R92
49.9K
1%
C93
(未実装)
Q91
C1815
D91
GMA01U
R93
10K
1%
ZD51
HZS7A-1
FG
Q62
DTA124E
R53
0.43
2%
1W
R67
1K
D61
GMA01U
R90
10K
R61
1K
Q51
A1707
L51
330uH
R63
10K
Q58
A1015
Q57
A1015
R64
3.3K
1%
R60
1K
R59
470
R80
100
C62
470p
R66
1K
ZD56
HZS9C-1
Q60
C1815
C54
1000u
6.3V
R78
47K
Q52
C1815
C63
0.01u
R79
22K
Q59
C1815
D59
GMA01U
IC51
TL431CLP
R89
10K
D60
GMA01U
R62
20
D55
ERB83
R65
3.3K
1%
R153
0.43
2%
1W
R167
1K
D161
GMA01U
R190
10K
R161
1K
Q151
A1707
L151
330uH
R163
10K
Q158
A1015
Q157
A1015
R164
1.1K
1%
R160
1K
R159
470
R180
100
C152
470p
R166
1K
Q160
C1815
R158
5.6K
C154
1000u
6.3V
R178
47K
Q152
C1815
C163
0.01u
R179
22K
Q159
C1815
D159
GMA01U
IC151
TL431CLP
R189
10K
D160
GMA01U
R162
20
D155
ERB83
R165
3.3K
1%
R86
100
HT2
(D51)
CN2
+42V/0.4A
GND
GND
+5V/1.2A
+5V
ESAVE
PSC
GND
GND
+3.3V/1.2A
+3.3V
R83
100K
C83
220u
10V
Q82
C1815
Q83
DTA113Z
ZD52
HZS24-1
ZD87
HZS24-1
R82
300
ZD89
HZS9C-1
R84
18K
D52
GMA01U
D63
GMA01U
D64
GMA01U
D65
GMA01U
ZD53
HZS7A-1
R87
1K
Q61
DTA113Z
ZD88
HZS3B-2
C84
470u
6.3V
Q84
C1815
Q85
DTA113Z
R85
1M
1/2W
C40BPSE 1/1
Rev.A




C408PNL 1/1
Rev.A

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Rev.A

IC604の各辺の3.3V電源に0.1u、0.01uの
パスコンを１ヶずつ入れる。

IC603・IC605のランドは、基板上では重ねて配置する。
部品は、どちらか一つを実装する。

ＡＳＩＣ

X600の配線は、短くする。

液晶パネルは、１２時明視で使用する。

ＦＰＣコネクタ

リセットIC

16M DRAM

4M DRAM

パネルブロック

ボードインコネクタ

F500の定格を
63V・0.5A
mark:LF
とシルク文字で
表示する。

DRAMとASICは、直近に配置する。
アドレス線、データ線を
短くする配置とする。

AGNDとGNDは、分離して配線して、
コネクタCN600のGND付近で接続する。

SDATA・SCLK・SCEからASICに入るまでの
パターンは、GNDでガードする。

バックライトコネクタ

TP903・TP904のみ、
部品面に配置する。

-32V電源

表示が最適コントラストと
なるようにVR500を調整する。
そのとき、VR501はセンター
クリックの位置とする。

センタークリック付VR

BRIGHTNESS

Y電源仕様

VOY 5V
VCCY 3.3V
GND 0V
VSY 0～-32V
VEE -32V

電源名 対 用途

+5V_0 : Continuous5V(Fused)
+5V_1 : PANEL 5V(Swed)
+5V_2 : BackLight 5V(Swed)
+3.3V_0 : ASIC/PANEL 3.3V
VEE_1 : PANEL -32V(Swed)

注１）特記なき抵抗、コンデンサのサイズは１６０８とする。
注２）特記なき部品は、チップ部品とする。
注３）以下の部品は実装しないこと。
C629・C630・C631・C633・C634・C635・C638・C643・C644・C645
C901・R510・R532・R608・IC605
注４）基板のコード・名称・仕様は、以下の通りとする。
コード：３００７５６２
名称 ：Ｋ２１０ＣＢ＿Ｒ２
仕様 ：ＣＥＭ３、銀スルーホール、２層、ｔ＝１．２ｍｍ

AGND SIGNAL GND
GND POWER GND